Impacts of Automation and Modernization on the Bureau of Land Management

Final Report

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Hofman Subcommittee

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Introduction

Purpose

This is the final report of the subcommittee established by the BLM Field Committee to analyze the impacts of automation/modernization on BLM. The need for this study arose because, as BLM became committed to total modernization of its ADP capability during the 1990s, it became obvious that modernization would have a dramatic impact on what work is done, where it is done, who does it, and how it is communicated and used throughout the organization. Understandably, these changes will have great impact on BLM's organization and its people. Therefore, these changes must be well managed.

The Field Committee is helping manage the Bureau's automation efforts, including modernization, and is preparing a new strategic/master plan. The Field Committee has established several subcommittees to develop portions of the plan. The "organization" subcommittee was formed to deal with this highly important aspect of modernization.

Methodology

The subcommittee's initial meeting was held in Phoenix on February 23-25th, 1988. The group clarified objectives, developed critical success factors, identified an analytical methodology, made assignments, and agreed on a timeframe.

Essentially there are three factors which require analysis: what systems will cause the impacts; the timing — impacts occurring now, those which will occur in the interim environment, and those which will occur during the target system; and finally, the different layers of the organization which will be impacted. The group defined the components of modernization as ALMRS, GIS/ARD, GCDB (individually and collectively as LIS), office automation, administrative functions, program specific functions (nonadministrative), and telecommunications functions. During the course of the study, records functions and mapping science functions were added. The current timeframe is basically fiscal year 1988 and part of 1989 or until most offices have Prime; the Interim period is when most offices will be operating on Prime, or until about 1993 or 1994; and the Target timeframe will be when most offices will be on the modernized system in 1994. The organization layers are defined as those existing now in BLM.

The group concluded that the major part of the assignment would be to look at the impacts of automation, in the current and Interim timeframes. Impacts occurring during these periods are already dramatically affecting BLM's skill needs, roles, and organization structure. Steps must be taken now to deal with these current problems and to assist the evolution of the BLM organization into the Target System which won't begin to come on-line until 1991/1992.

The study scope was also clarified to cover the impacts of automation and modernization on role/functions, structure, and skill needs as a logical aggregation rather than to work under the too general heading "organizational" impacts.

Phase one of the study was to ask a series of questions of carefully selected knowledgeable individuals at each organizational level: "What work is being done in your unit using automation? What impact is that having on roles/functions, structure, or skill needs? What recommendations would you make to resolve problems or issues?" The questions were repeated for the Interim period and the Target timeframe.

In phase two, the group integrated the responses into a series of six major issues in a draft report. The draft was circulated to the Field Committee members for review. It was also widely reviewed at all organizational levels in the Bureau from July to October 1, 1988. The conclusions were:

- the draft accurately identifies the main issues the Bureau is focusing on in automation/modernization and
- remedial actions along the lines recommended in the draft are urgently needed.

Phase three is the final report prepared in April 1989, from the formal and informal comments.

Future Actions

In November of 1988, the subcommittee chairman requested a formal organizational study be conducted to cover the roles and functions and organization structures required to meet the current and foreseeable automation workload at the SO, DO, and Resource Area levels. The AD, Management Services, concurred and the Director approved the study in late November. The study team has been assigned under the direction of Piet Van Zanden, ASD Idaho. Work should be completed in July of 1989 in time for specific guidance in the 1990 AWP. Until that time, there is to be no major organizational changes to deal with automation.

The master/strategic plan prepared under the direction of the Field Committee will be completed in the spring of 1989. It will contain action plans to complete the recommendations from the "organizational impacts" report. Diligent efforts on the action plans should provide the results necessary for the Bureau as an organization to achieve automation/modernization.

Also in November of 1988, the chairman of the "organization" subcommittee became a Special Assistant under the Assistant Director for Management Services. This assignment includes implementing the recommendations of this report with emphasis on organizational structure, personnel and training needs, and budget strategies. The Special Assistant will be working with the AD for Management Services, the Field Committee, the Service Center Director, and others to help achieve these goals.

The Field Committee also approved a proposal for the PTC to conduct a training needs analysis for LIS. This analysis will be completed for consideration in the FY 1990 AWP.

Preamble

The Bureau's very rapid entry into automation has brought into sharp focus the undefined roles pertaining to managing automated information throughout the organization. In particular, the technical role of ADP and the managerial role of Information Resource Management (IRM) are evolving so rapidly that a common understanding of what these terms mean and what their functions include is absent. Debate is ongoing at all levels of the organization regarding the definition and role of ADP and IRM in the Bureau. New organizational units and positions have been created based on the differing concepts. These concepts range from the belief that only the line managers can be true IRM managers, with ADP as one of a number of tools available, to the belief that an IRM Manager should be designated and assigned specific responsibility for all information related functions.

In addition to the confusion regarding the broad definition and role of IRM, ADP, and related functions at each level, there is serious confusion regarding the roles of the WO and the Service Center. Traditionally, the WO sets policy and Bureauwide procedures for all resource, management services, and support programs. However, the Service Center has been at the leading edge of automation/modernization development and implementation. Traditional distribution of responsibilities between the WO and the Service Center is taxed by rapidly moving projects and evolving technology. This is causing difficulty in sharing knowledge and information between the organizations in sufficient quantity and quality so that decisions and policy may not be the most responsive to needs. Some people even feel the Bureau decision-making processes are ineffective in the current fast moving IRM environment.

Organizational stress and considerable chaos will result if the following basic issues are not resolved and agreement reached on roles, functions, and organizational structures throughout the Bureau.

At the center of resolving these issues are BLM's managers. They must assume, above all, the role of leading the BLM organization into the world of automation. They must determine and agree on who will do what, where, when, and at what cost, and they must do it quickly to achieve an effective evolution from the current and interim systems into the Target System.

Management of Automation/Modernization in BLM

Information Resource Management as It Relates to the Bureau Mission

Problem Statement

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Discussion

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Management of Automation/Modernization in BLM

Information Resources Management as it Relates to the Bureau Mission

Problem Statement

Management of automated information has taken on a new organizational life of its own. IRM is becoming a program without clear linkages to the Bureau's mission or it's existing roles/functions and organizational units. This is caused by a general lack of technical ADP understanding by many program specialists and managers. Also, the modernization effort is so massive and fast moving and is occurring somewhat in isolation from ongoing day-to-day problems faced in individual programs, that line and program managers lack a clear vision of how automation and modernization will directly benefit their input towards the Bureau's mission.

Discussion

The Bureau has a threefold mission:

- Keeping the lands and minerals records,
- performing official surveys and,
- managing the resources.

Program leaders and specialists associated with the mission components are logically the users of the automation tools. Many BLM program specialists have made the effort to understand enough of the technical capabilities of ADP to adapt and manage its applications to their program issues and problems. However, many have not. With development of modernization occurring at the Service Center, it is not clear to field program people how to anticipate automation applications in the future. Often developmental people look only at the technical aspects of automation/modernization, and the program applications tend to move toward the back burner.

Similarly, many line managers and supervisors have not accepted the role of managing automation as a tool to achieve the Bureau mission. They are motivated to maximize current production, and many are unwilling to accept the "conversion" time and costs to adapt the ADP tool. This void is, to a large extent, being filled by technical ADP people who are assuming the role of managing technical information systems and, by default, their applications for managing programs. The problem remains: program and line managers don't know how to manage automated information systems and information systems managers don't know how to manage natural resource programs. Improved communication and agreement among line managers, technical ADP people, and users is needed.

Recommendations

Assert that BLM, as the premier multiple-use natural resource management agency, is undertaking a comprehensive program to automate its land and mineral records, it's cadastral survey information, and it's natural resources data for the purpose of more effective resource management and service to the public.

Specifically define the roles of managers as the leaders in the development and management of automated information systems to assure that they are utilized for the effective and efficient conduct of the Bureau mission.

Specifically define the roles of program leaders at the WO, the State, and the District Offices as the policy makers and implementers of automated information applications that relate to their individual programs.

Require technical automated information systems people, managers, and resource program people to collectively develop formal processes and action plans to specifically identify what issues will be addressed with automation and how the technology will do it.

Undertake a comprehensive review of existing, newly established organizational units and positions which are responsible for automated information and assure that they are compatible with a Bureauwide organizational concept which permits such units and positions to be consistently oriented toward accomplishing the Bureau's management goals (Van Zanden Task Force).

New Requirements for Decision Making

Problem Statement

BLM's standard model for making major decisions through its management teams at the various organizational levels is having trouble dealing with the complexity and magnitude of modernization issues. These management teams are not always able to make knowledgeable timely decisions. BLM does not always participate effectively in the decision processes of OMB, the Department, Congress, and others whose actions can seriously alter BLM's range of automation choices.

Discussion

As the BLM finds itself spending more time, effort, and money modernizing its ADP resources, management is discovering that it must also make many more complex and significant decisions regarding ADP matters. Frequently these decisions must be made in relatively short periods of time and typically involve very technical considerations. As a result, "traditional" decision-making processes, involving orderly and hierarchical decisions of familiar natural resource and general management topics, may not fit well with the topics and timeframes involving ADP matters. In this traditional BLM decision-making mode, the Bureau has established the Field Committee to help monitor and make recommendations on automation/modernization. However, Bureau management teams at all organizational levels must also consider courses of action and make decisions that involve priorities, work outputs, and funding. This decision-making approach often expects all members of the management teams to be equally well versed in the subject matter that is before the group at large. Some problems with the traditional decision approach in the complex technical automation matters are:

Education: ADP subjects can be highly technical and complex even for those regularly involved. Adequately educating all decision makers is neither practical nor desirable unless there are no time constraints on when decisions must be made.

Timing: Committees and management teams typically meet on a predetermined schedule 2 to 6 times per year. The frequency or timing of these meetings may not be at all coincident with the need for making major ADP decisions, already protracted by requirements that go into ADP procurement. Furthermore, the ability to get an adequate block of time on agendas has become seriously constrained and limits the ability to communicate between technical ADP managers and line management decision makers.

Completeness of information: The two preceding problems can lead to situations where managers are expected to make decisions with incomplete information or defer decisions even when timeliness is critical.

Level of trust: As a standard approach, the Bureau generally reserves decisions on policy matters to line managers. Staff managers carry out these policy decisions and make decisions on some technical or administrative matters. There is a trust level with this relationship that has developed through historical practice and acceptance. Policy decisions on highly technical programs will continue to dominate management team discussions as our hardware and software investments take larger segments of annual budgets. Some managers have not yet developed a trust level of technical ADP managers which permits them to make major technical decisions, even if they fit well with the existing "traditional" decision process.

Communication of decisions: There is evidence that decisions made in the highly fragmented decision processes at higher levels are not always communicated well to lower level managers and staff. As a consequence, lower level managers do not readily "buy into" automation efforts or commit their support.

In addition to being concerned with how BLM carries out its internal decision making, it

is also necessary to recognize that there are numerous outside influences and interests that effect BLM. Increasingly, BLM decisions in automation are becoming more closely scrutinized by any number of outside sources. As we choose to automate portions of our internal operational processes (e.g., ALMRS as a tool for adjudication decisions), we need to be alert to the fact that outsiders may have a keen interest in technological applications as well. The tools used for managing automated information may be of use to others. Municipalities, counties, state agencies, sister agencies (e.g., USGS, MMS), users, and industry will all have interest in our data. Decisions on technological choices and standards that we impose may now be of as much interest to others as our resource decisions have been in the past. Conversely, decisions made by others in the technological arena will often affect our own range of choices such as actions taken by the Department, USGS, MMS, Congress, and in certain instances, even industry.

Recommendations

To improve the ability to respond to Bureauwide issues, designate two members from each management team at each organizational level as key members for automation/modernization issues. These two members will be responsible for being knowledgeable about the issues and will represent these issues before the full management teams. These two members will also work closely with the Field Committee on issues.

To better coordinate and communicate activities and intentions with outside parties BLM should:

- be more aggressive about purposefully using outreach teams of technically knowledgeable people;
- make better use of existing MOUs and develop new MOUs where cooperative ADP activities are most important;
- encourage participation of shared decision-making where more than one agency is involved; and
- take purposeful action to promote and advertise our automation efforts.

To assist prudent day-to-day decision making at all levels, managers and supervisors should:

- require good analyses, briefings, and option papers;
- directly involve the affected interests (e.g., ALMRS, GIS, etc.);
- encourage candid evaluation of existing efforts before moving ahead;
- get opinions or recommendations from outside experts;
- ask others in BLM who have been previously involved in pilot efforts; and
- make full utilization of ADP steering and user committees.

To improve accountability and facilitate time critical decisions, determine what level of authority to delegate to technical ADP staff and managers and be willing to actively support such delegations.

Improving Communications

Problem Statement

Generally both internal and external communications are poor about the Bureau's automation and modernization efforts. Internally, poor communication problems are especially severe among managers, technical ADP people, and users. Communication problems are in large part caused by fragmentation among both old and new organizational units, and among system components, because of unclear roles of committees and coordinator positions and fragmentation in the technology itself. Externally, communications are generally poor to Federal, State and Local agencies and governments, to elected officials at all levels, to private industry, and to the public at large.

Discussion

Internal: Effective management of automation/modernization in the Bureau requires effective communication about what is going on. Communications internally are currently poor in large part because of severe fragmentation. Parts of the fragmentation problems appear as issues elsewhere in this report. New automation organizations and positions have emerged at various levels of the Bureau. Communications cannot be effective if it is not clear what the new roles are, how they relate to traditional organizations and positions, and if the new organizations and positions vary greatly among and between all organizational levels.

The new Service Center IRM organization, prematurely established, State Office IRM organizations, the lack of District Office or Resource Area Office IRM organizations, and the new WO LIS staff are all examples of organizational situations where communications need improving.

ALMRS, GCDB, GIS, and LIS coordinators and Data and Database Administrators are examples of new types of positions that need to establish or improve their communications. The Field Committee and IRMAC need to improve their communications, especially downwards.

While communications tend to be better within system components such as ALMRS and GCDB, they tend to be worse when it comes to describing how the system components fit together into LIS.

Currently, there are so many different types of hardware, software, and telecommunication systems that communications tend to flow along technological lines rather than be about program applications.

The lack of data standards is causing communications problems and as more data is automated without a framework of data administration, the problem will become more severe. Data is the language of automation communication; if the Bureau cannot organize it's language, it cannot communicate to achieve successful applications.

External: Communications are generally poor externally but vary at organizational levels. There has been a well organized effort to communicate with congressional staffs and other agencies at the WO level.

Although attempts have been made to develop an outreach plan at BLM's field level, this is not yet effective. The reasons for poor external communications at the field level include general lack of understanding about modernization and lack of priority. Simply put, field offices already have more issue oriented outreach needs then they can handle. Also, it appears that the responsibility for outreach is being channeled through the LIS staff in the WO to LIS and program people in the field, rather than through the Public Affairs staffs who already have the outreach responsibility.

BLM has justified the cost/benefit of modernization on shared costs and benefits from other agencies. Making this happen will require a significant improvement in external communications.

Recommendations

Complete and implement the organization study being led by the ASD from Idaho. This will standardize organizational units, roles, and functions at the SOs, DOs, and Resource Areas. This will clarify who is officially doing what in automation/modernization and will improve communications involving administrative actions, such as coding, filing, funding, etc.

Complete the master plan in a timely manner. This will clarify the communications about overall policy, determine what the issues are, and set forth the action plan to solve the issues including responsible officials and timeframes.

Develop and implement a strategy for the distribution and use of the plan. At a minimum, the distribution should include: briefings at conferences and workshops, at PTC training, and presentations at management team meetings.

Develop a public affairs plan which provides for communication of the plan to audiences outside BLM.

Review and rewrite, as necessary, the charter of the various coordinating groups (ALMRS, GIS, LIS, etc.) to reflect how these groups fit into the broader picture and how their components combine to form an overall system.

Develop standard charters for and implement automation/modernization oversight committees and user committees at appropriate

organizational levels. These committees operating with standard charters will greatly improve the communications among managers, technical ADP persons, and users.

Conduct, evaluate, and expand as appropriate the New Mexico "Road Show" which will improve communications by improving the understanding and acceptance of automation/modernization.

Continue to conduct, evaluate, and expand as necessary, the PTC course "Introduction to Automation for Managers and Translators." This will also improve communications by improving the understanding and acceptance of automation/modernization.

As difficult as it seems, nontechnical people must learn the jargon associated with automation/modernization. Issue a glossary of terms to all employees.

Roles for Managers

Problem Statement

Many BLM managers understand, accept, and personally engage in managing and leading current automation efforts. Generally, these managers are also active in supporting modernization. However, there are many managers, at all levels, who have not come to understand, accept, or lead these efforts. There is, in some cases, a lack of basic education and experience influenced by age. Also, there has been no compelling Bureauwide requirement placed on all managers to understand, accept, and manage automation and modernization. Automation/modernization efforts will not be successful if there is not active leadership by managers.

Discussion

Managers and supervisors vary greatly in their understanding, acceptance, and management of automation and modernization. Many are knowledgeable and enthusiastic. Many are not.

Many managers don't have the education and the experience as part of their background. The average age of GS-13s in BLM is 47, GM-14s is 48, and GM-15s is 50. Many people in this age bracket are not computer literate.

A second factor is that there is no compelling reason why upper level managers and supervisors need to become personally involved. There are no automated systems that upper level managers use among themselves on a continuing basis. There is not much peer pressure. Managers have many other priorities which are more compelling; therefore, they spend time on those and little time on automation/modernization. They are motivated by and rated on efficient productivity.

As a result, many managers are not involved in major automation/modernization decisions, some of which have and will impact key program management policies, procedures, and funding priorities in a major way. Many managers feel left out of decisions involving key ADP development issues. They know they need to develop a better understanding; they know they need to do a better job of managing automation. When managers are motivated to manage automation and are rated on their accomplishments, management will happen.

Managers of all types and at all levels MUST have a clear understanding of their IRM responsibilities before they can act effectively to implement or even support automation. Definitions of IRM related roles are confused or nonexistent in most areas and levels of the organization. The impacts of automation are being dealt with in a disjointed, fragmented manner that has generally added to confusion over roles and responsibilities. As a result of the lack of clearly defined roles, overall planning and strategy to guide and manage the impacts of automation have generally not been developed as a function of managers.

A unique problem has surfaced with the functioning of the coordinator and other staff positions deeply involved in ADP activities. Where they have significantly more ADP expertise than the managers served, or find those managers not interested or involved in their functions, and have a forum/network with similar positions or coordinators in other offices, they occasionally have moved into the vacuum. The result is the line manager's decision-making and management role is usurped and the usual line-staff relationship is entirely bypassed. However noble in purpose, the effect has been to create an unofficial management stratum that may (and has) worked at cross purposes with Bureau policies and decisions.

Recommendations

BMT Action - The involvement of upper level managers must start at the BMT. The BMT should identify as a major project the development of a plan to deal with the role of managers in automation/modernization. The plan should include policies and action forcing events including training and operating systems for use by top managers (e.g., office automation, electronic mail, voice mail, teleconference, laptop equipment, the CO-System etc).

State and District Management Teams - These teams are mostly directed toward resource management issues and priorities. Like the BMT, these teams should address automation/modernization issues and develop State and District action plans.

AD Hoc Structure - Managers should become personally involved in ADP Oversight Committees and user committees at all levels. Many decisions are made by these committees which are critical to managers. For example, California has initiated an Automated Information Management (AIM) committee chaired by the ASD.

Coordinators - Managers should require periodic briefings by coordinators on ALMRS, GCDB, GIS, LIS, etc.

PIPRs - Managers should develop standard ADP PIPR items for their subordinates.

Role Models - Role models are very effective. Managers can lead by doing. They can create an atmosphere for constructive change and innovation. They can manage by "walking around" and talking to and encouraging people working on ADP issues.

Applications - Managers can use automation to assist on major issues and decisions which are important to them. Managers should identify and support these applications and use them in day-to-day work, e.g., work assignments, special maps, issue papers, desk top publishing, meeting notes, etc.

Training - Managers often don't take the time to attend training. However, for those managers who don't have a background of education or experience in ADP, training is mandatory. Each manager should assess his/her own Individual Development Plan as it relates to ADP knowledges and skills and acquire the needed training.

Strategies for Skill Acquisition

Problem Statement

The Bureau lacks the full array of needed ADP skills in many offices at all levels of the organization. There is an urgency to obtain skills needed now in the interim which will prepare BLM for the Target System. Training, contracting, and recruitment planning are currently not included in a skills acquisition strategy. The Bureau has difficulty meeting all its EEO goals. Skill acquisition strategies for automation can obviously help alleviate this problem.

Discussion

BLM's automated systems are rapidly expanding in their ability to assimilate data and provide assistance in resource decision making. This technological "revolution" requires even greater user, technical, and managerial expertise, in order to effectively manage, operate, and utilize the systems. While several BLM offices have initiated efforts to acquire a cadre of ADP trained employees, there are many differing opinions regarding the Bureau's overall success in having suitable ADP skills in the right places. Most skill acquisitions have been on an "as need," piecemeal basis. Concerns have already been raised about the "highgrading" of employees with computer skills from one organizational unit to another. Many offices are in a constant training mode, which does not allow them to develop the stable base needed in the work force. The following typifies other concerns raised during the study:

- What skills are needed now and how do they fit with skills needed for the Interim and Target Systems?
- What skills are needed in what organizational locations?
- What skills should we acquire by contract?
- What skills should we recruit for from outside?

- What recruitment strategies are needed?

  - What should we do to train our own people—technical, managerial, etc.?

  - How can we improve the management of training in BLM at the WO, at the PTC, and at other organizational levels to assure we identify needs, develop programs, acquire funds, deliver training, and assure effective application?

  - What changes are needed in the personnel system to assure we can acquire the right skills as effectively as possible?

  - What criteria should be used to establish computer literacy requirements for various jobs?

  - How can we achieve technical automation skills in natural resources specialists and managers and assure that technical ADP people develop familiarity and support for natural resource programs?

  - What changes are needed in the administrative system to assure we acquire and manage the needed automation skills through contracts at each level as effectively as possible?

Recommendations

Complete the Van Zanden study which will identify what work will be done at each level, the roles and functions of various organizational units, and the skill needs. This study will provide a perspective of the skills needed now, for the Interim, and for the Target System. As the configuration of the Target System becomes clearer, the skill needs at various levels should be adjusted.

Involve the HRDC in the following strategies.

For Training Strategies:

- PTC should complete the training needs analysis, evaluate it, and implement appropriate recommendations.

- WO should oversee the development of a training program with institutions outside BLM.

- Develop upward mobility programs to retrain our employees.

- Train classifiers to understand and acquire skills needed to rate and classify automation jobs.

- Develop special OJT programs for automation/modernization, e.g., at the Service Center and pilot states.

- Continue training course "Automation for Managers and Translators," at least until a "critical mass" of managers has beened trained.

- WO should evaluate the overall management for training (with the addition of automation training) to: strengthen the management of training, reassess the appropriate role of the PTC, and develop an equitable process for annually assessing training priorities and funding.

- Devote part of each Bureau workshop/ conference to new technologies and innovations that are computer assisted.

- Schedule training opportunities to ensure that a majority of users are available to take advantage of information exchanges.

- Provide computer training at the work site, where possible.

- Give special attention to overall training to get ready for the Target System, not just focusing on training for the Interim.

- Create as much "user interface" as possible in the Target System.

For Personnel Strategies:

- Develop standard position descriptions, series, grades, and classification standards for automation job categories.

- Identify structure, roles, functions and delegations at each organizational level (followup on the Van Zanden study).

- Include KSAs for all managerial positions referencing knowledge of computers and computer systems and management of those programs.

- Amend supervisors PIPRs to reflect the new job responsibilities facing them related to managing technological changes.

- Develop Individual Development Plans for all employees to reflect additional training needs to meet Bureau IRM goals.

- Reward people who have gone out of their way to increase their capability in the ADP area, i.e., awards, increased grades.

For Recruitment Strategies:

- Each office develop a CO-OP education program for automation positions.

- Each EEO officer recruit for automation positions to help meet affirmative action goals.

- Take recruitment actions which reflect new employees' knowledge of IRM procedures and practices.

For Contracting Strategies:

- WO, with Service Center, consider an analysis of what automation work should be contracted.

- WO, with Service Center, develop and implement contracting plans.

- WO, with Service Center, train contract administrators.

For Funding Strategies:

- WO develop a process, in connection with the AWP, which identifies and funds the annual acquisition of skills through training, recruitment, and contracting.

Impacts of Modernization on Field Organizations

IRM Organizational Structure

Problem Statement

Organizations at all levels of the Bureau are being stressed by changes in technology and the resultant new ways of doing business. The foundations of clearly understood roles and responsibilities that allow constructive management of organizational design and placement of functions is largely missing. Uniformity in where and how automation functions will be performed is a major concern. Offices are establishing or planning to establish new organizations without a Bureauwide plan or even agreement on appropriate locations for functions and responsibilities.

Discussion

Some of the major areas of concern that were identified by the field include:

- The effect of automation on the Bureau three-tier organization:

  One of the most prevalent concerns is how automation will effect the three-tier, state oriented Bureau structure. Predictions of effect involve generous amounts of guessing regarding the architecture of the Target System (centralized or distributed), how decision making will be affected (centralized or decentralized), and how information flows will be designed. Until the Target System design and capability is fully understood, and perhaps implemented, predictions are nearly impossible. At this time, nothing is known from an automation viewpoint that would change current policies toward the Bureau structure. Compared to other automation issues we are facing, this is a low priority concern yet it is a topic of much discussion.

- The ability of State Information Services organizations to support additional automation:

  The current State Branches of Information Services vary widely in staffing, services they offer to the statewide organization, and skill level. They are generally underfunded and must utilize benefiting subactivity dollars for many of their activities. Many State Information Services organizations provide little, if any, data entry, user (application) support, or programming expertise to their clientele. They concentrate on computer operations, technical support, and procurement assistance. Where the Information Services organization does not provide a full range of ADP support, individuals outside of the ADP organization have become the in-house experts. They fill the gaps as best possible, usually without guidance, direction, oversight, or plan. To move constructively into automation, the ADP support functions need to be controlled and directed. It may not be necessary or even desirable to have them all located in one place, but it is necessary to clearly understand their responsibilities, how they relate to other functions, and who has the management responsibility.

  There is also concern about the service/assistance orientation of State automation organizations. The separation of the ADP organization and functions from the Bureau mission and program concerns increases markedly as one progresses from Resource Area to District Offices to State Offices. In some places where there is a strong automation effort at the District or Resource Area, the State is perceived as the greatest roadblock. The concern expressed centers on the lack of understanding of the work of the Bureau and

the need for flexible approaches to resolving program problems.

- The ability of Districts and Resource Areas to support additional automation:

- Districts, and to an even greater extent Resource Areas, have generally not been significantly involved in major ADP activities prior to the arrival of Prime. Many Districts do not have an ADP specialist; only a very few have an ADP staff. Although almost no Resource Areas have an ADP specialist, they often have considerable expertise on staff because the young are arriving on the job computer literate. Their skills are being utilized in many ways, but again often with only their own initiative as guidance. At District and Resource Area level, major concerns are identifying skills (and skill level) needed in the coming years, where in the organization the multitude of Information Resource Management functions should be performed, and most of all, how to fund these new costs.

- The widely differing organizational responses to automation:

  As an effort to clarify the roles and respond to increasing automation demands, states are considering a wide variety of organizational changes ranging from placing all ADP functions under one organization to dispersing them as much as practical. Currently, there is no organizational guidance for automation related functions or requirements for WO approval of State or District organizations. This is especially critical as there is also very little guidance regarding roles and responsibilities in major IRM areas. The organization options currently being considered reflect this confusion. Definition and placement of functions within the State or District organization will in large part govern how they will operate. Unless carefully thought through, these widely varying reorganizations under consideration may institutionalize our confusions rather than clarify roles and responsibilities.

Recommendations

Determine the desirability and willingness of the Bureau to consider changing the three-tier, state oriented structure. Issue a policy statement to all employees reflecting the decision.

Conduct a study of ADP and IRM roles, functions, responsibilities, skills, and structures at State, District, and Resource Area Offices, (Van Zanden Study).

- Identify and define the automation functions appropriate for each office and determine the organizational placement for each.

- Review organization proposals and studies currently being considered and recently put in place.

- Identify skill needs.

- Recommend ADP/IRM organizational structures for organizations of various sizes.

- Combine studies or incorporate recommendations for automation functions and organizations with decisions and study findings on Records, Mapping Sciences, and Program Leader/Specialists.

- Institutionalize the agreed upon roles, responsibilities, and organizational placements in the Bureau 1212 manual, the changes to position descriptions and PIPRs, and provide guidance for organizational configurations.

Program Leader/Specialist Roles

Problem Statement

There is confusion regarding the automation role and responsibilities of the program leaders and program specialists at all levels of the organization. IRM policy and standards specific to program concerns, data management, user representation, and application development are

all areas of concern. The advent of various types of Coordinator and Administrator positions which do not have common functions or objectives further confuses the program specialist/leader role. Additionally, they often combine ADP and program responsibilities in one position. To clarify roles, some offices are considering removing all ADP responsibilities except input and user functions from program personnel and placing them in an ADP organization. Other offices are embracing active involvement of the Program Leaders in automation activities.

Discussion

During the past several years, the role of program leaders has been evolving from major emphasis on budget management to a new thrust on program management. Rapidly growing numbers of ADP applications for resource and technical programs adds to the confusion and concern regarding their role. Now program leaders are assuming varying degrees of responsibility for automation concerns. Their involvement seems to depend on the ability of the local ADP organization to provide support, their personal interest in ADP, and management attitudes. Overall, there is particular concern regarding the extent of their responsibility for data base management, IRM policy, standards enforcement, quality control of data collection and input, programming, and user representative functions.

There is confusion about who should perform responsibilities that have traditionally been the program leaders', but when automated, seem different and require some computer skills. Examples include quality control of the data gathering and compilation efforts at field level; providing guidance and assistance with, and even formats for, the data collection/compilation efforts; providing standards for that data; assembling statewide or districtwide reports from the collected data; assuring the appropriate records and files are created and maintained. The automation terms for the above functions include data base management/administration, data standards development, programming or "coding" standards enforcement, and user representation/support.

In some cases, the technical and resource program leaders are learning the needed skills and assuming these responsibilities. In many other cases, a lack of ADP skills is causing managers to shift responsibility for traditional program leader functions to the ADP organization or to a specialist where the automation expertise exists.

The concept of "User Representative" is not well understood or clearly defined. As generally described, the user representative is the program specialist located in the program division (Resources, Technical Services, Finance, etc.) who provides liaison between the user and the ADP technical personnel for a specific application. This person is also the main contact with the field for assistance with use of the application. Other responsibilities include preparing user manuals, identifying areas where existing or new ADP applications could provide efficiency, performing requirements analysis, developing models, and providing informal user training.

Occasionally, development of applications (formatting and manipulating information) for local use has become the responsibility of program leaders. This has been fostered by a number of events, including mounting pressure from the field for assistance, the lack of sufficient programming personnel in the local ADP organization, and the increased availability of PCs. This causes confusion within the ADP community, as this has traditionally been their role. The question that needs examination is whether one can (or should) prohibit program leaders/specialists from developing applications. This issue is hotly debated by both sides. Due to the critical issue of quality control and standards enforcement, it needs to be resolved as part of the role issues.

Currently, there is no established system for assuring the applications that are developed outside the ADP organization undergo quality control, comply with standards, are properly documented, etc. The need for this control centers on the answer to the question of who will do simple and complex application development and the requirements for standards and quality control.

In the absence of guidance regarding the roles of program personnel in the automation environment, a few organizations are considering placing all ADP responsibilities, except pure

data entry and user functions, in the local ADP organization. Other offices are moving toward organizations that allow maximum participation in all facets of automation.

Recommendations

Analyze and clarify the role and function of program leaders/specialists at all levels in managing automation and automated functions.

- Analyze traditional program leader and program specialists responsibilities and identify the automation counterpart. Determine the appropriate program leader/specialist role.
- Analyze new responsibilities and needs and determine the appropriate role of the program leader/specialist.
- Determine the skill needs to manage the automation responsibilities of a program leader/specialist.
- Coordinate or incorporate this analysis with the ADP role and function study—Van Zanden.

Institutionalize the agreed upon role in the Bureau 1212 manual, changes to position descriptions and PIPRs, and provide guidance to ensure vacancy announcements, KSAs, and other selection factors support the conclusions.

Roles of Coordinators, Administrators, Groups, and Committees

Problem Statement

There is a proliferation of positions titled Coordinator and Administrator at all levels of the organization. There is no general agreement on the scope of their responsibilities, how they should operate, or what the appropriate organizational location for these functions/positions should be. Additionally, there is confusion about the role and function of all the committees which have taken on some aspect of automation and modernization. Their charters are often overlapping, their scope is not clearly described, and the method of utilizing the information or data developed is not well defined.

Discussion

Coordinators have been designated for various ADP related functions. While they are called "coordinators," these positions do not all have similar functions. ALMRS and GCDB Coordinators are operational, oriented toward data base development/data collection, and often involved in contract administration. The GIS Coordinators are system use promoters, performing as a User Representative for the GIS/MOSS application. The LIS Coordinators generally have true coordination responsibilities: communicating with a broad user community, performing as liaison between the many organizations and individuals involved in LIS, and assuring the installation and implementation of all systems is properly integrated. All of these separate positions are responsible for both ADP and traditional program concerns. Some Coordinator positions appear to have only a short life span, others may be valuable for many years. Position descriptions, functions, and organizational location vary significantly from state to state for all of the coordinators except GCDB. This impacts the way each position operates and the scope of the functions performed.

Data administration, data management, data base administration, and data modeling are major automation responsibilities new to the Bureau. There is no common understanding of what the responsibilities are, who should be performing them, or where they should be located organizationally. States and Districts have been encouraged to establish Data Administrator positions, yet are very unclear about their responsibilities as is demonstrated by the variations in position descriptions. A proliferation of terms without common definition is part of the problem. The AMS Study provided a series of role statements for data administration and data base administration but did not put it in the framework of either a State or District Office. Even ADP professionals do not all agree with the AMS definitions or have a clear concept of how they should be defined and managed in State or District Offices. As

discussed earlier, before assignment of responsibility for any of these functions is made, careful consideration must be given to the current and future role of the program leader/specialist.

In addition to "Coordinators," administrators, and other new functions, many groups and committees have been established to further the development and implementation of LIS and modernization. These include the Bureau Management Team, the Field Committee and it's nine subcommittees, the IRM/AC, the ALMRS Representative Committee, and the great proliferation of steering committees, user committees, and coordinating groups.

The objective of groups and committees is admirable—involvement, information sharing, user input, etc. However the proliferation causes difficulty in knowing the roles of the differing groups/committees, coordinating efforts, assuring consistency in direction, and avoiding duplication and overlap. The impact these groups/committees have on the LIS modernization effort is unclear. The degree to which they interrelate or even usurp responsibilities of those directly performing the management, direction, and decision making of LIS and modernization should be examined. Papers prepared by these groups are circulating without official endorsement by top management or the Service Center modernization group. There has been no examination of their value nor a requirement for establishing a sunset date. At this time, the connection of most of these groups and committees with the LIS/modernization effort seems very loose and there is no assurance of constructive integration.

Recommendations

Analyze the role, function, and organizational location of coordinator and administrator positions.

- Review current charters, position descriptions, products and expectations of each type of coordinator and administrator.
- Analyze the need for these positions now and in the future. Recommend a sunset date if appropriate.
- Recommend appropriate functions and organizational location or reporting relationship—current and future.
- Review the titles and recommend appropriate changes which will reflect their responsibilities and diminish confusion.
- Formalize the role/function in the Bureau 1212 Manual at State, District, and Resource Area levels.

Develop a role and function directory for all of the automation terms or titles that have role, responsibility, and performance expectations (e.g., Data Administrator, User Representative, GIS Coordinator, System Owner, etc.). For each term or title, specify by organizational level:

- Functions and responsibilities associated with the title or term.
- Who is to perform and who is to manage each function.
- The appropriate organizational location for the performer and manager.
- Linkages with other automation roles/positions, program and technical concerns, and with similar functions at other organizational levels.

Analyze the role, functions, structure, reporting relationships of all automation related committees, groups, task forces, etc., operating on a Bureauwide basis.

- Identify how these groups interrelate to each other and with the LIS/Modernization project.
- Identify useful lifespan and how the hand-off of their products/responsibilities should be managed at termination.
- Recommend changes as appropriate to clarify roles, eliminate duplication, ensure appropriate work is accomplished and integrated with the LIS/Modernization efforts and ensure communications from all groups regarding policy, procedures, and philosophy are consistent with each other.

New Functional Requirements for Records

Problem Statement

Records functions will be significantly affected by increasing automation. New concepts of records and new skills will be required. Historically, the records functions have been spread among a number of organizations at State level. Automation will require more common understanding and management of records than has been necessary in the past. As yet, we have not defined how records will be created, who will manage these functions, or what the organizational location of various records responsibilities should be.

Discussion

Currently, the records functions at State Offices, and to a lesser extent at District Offices, are commonly fragmented among a number of organizations. In particular, dockets are generally in the Division of Operations; central files, library, mail, directives management, and paperwork management are often in Administration; and minerals files that are subject to privacy/confidentiality regulations are usually in the Division of Minerals. Mining Claims Recordation is considered a records function, but is usually located in Adjudication or the Public Room. Likewise, plats and maps are usually maintained and located in the Public Room. With the advent of automation, many of these functions will share common data bases, records characteristics, retrieval, and storage characteristics. The fragmentation of these responsibilities among many organizations may no longer be effective or efficient.

Both the functions of records management and the skills required to perform the functions are expanding to include all of the requirements of managing records in an automated environment. In the near future, an understanding of data base management; electronic records retrieval, reproduction, and storage; logical data models; and Data Element Dictionary (DED) elements will be required. Data that is invisible can be manipulated in an infinite number of ways. It is subject to different privacy and Freedom of Information Act rules and will present entirely new challenges to a records manager.

The creation of records is another area of concern. In a media that can be continually changed without leaving a trail of what, where, when, or why changes are made to any document, a "paper" or audit trail can easily be lost. The vulnerability of some data and information will be significant unless appropriate guidance for records creation is issued and enforced. There are also significant issues regarding the definition of a legally acceptable document. Until the courts make a decision regarding the legality of electronic records, risk assessment regarding the need for paper files will be necessary in every case where the Bureau may be involved in a court case requiring documentation.

Thought also needs to be given to design of physical facilities. The addition of electronic records responsibilities may require substantial modifications to space and equipment requirements.

An examination of the entire area of records management may help prepare for automation by clarifying roles and functions, consolidating responsibilities, and identifying facility and equipment needs.

Recommendations

Identify the roles and responsibilities associated with records management under the Target System.

Review the organization structure, location, and functions of all the records components in each organizational level. Recommend changes as appropriate in structure, role, function, and staffing to increase records management effectiveness in an automated environment.

Determine whether the appropriate skills exist in each organization to administer the roles and responsibilities defined above. Identify new skills needed and recommend training or other appropriate means to achieve skill needs.

New Functional Requirements for Mapping Sciences

Problem Statement

Mapping sciences will have an increasingly important role in resource management as LIS/ Modernization develops. Currently, the mapping sciences functions are highly fragmented and often not able to readily integrate their activities to provide the necessary support to LIS.

Discussion

Generally the mapping sciences umbrella includes remote sensing, aerial photography, photogrammetry, cartography, plat drafting, map preparation, and graphics. Typically, States have individually distributed these functions among a variety of organizations. In the past, coordination among the different mapping sciences components has not been a primary need, thus it is often weak. Some functions have not been staffed or are seldom used. Currently, use and location of remote sensing and aerial photography are often dependent on the chance of resident skill some place in the organization. Plat drafting and cartography are rarely combined; graphics is located in a variety of organizations.

The development of automated means to portray land and resource features ties these functions together in a new way. They will be using common data bases, often building on a common digital base map that is tied to geographic coordinates. Work is underway to develop a means to convert satellite imagery data to the digital data used in the Geographic Information System applications. Satellite imagery and aerial photography are converging in their capability to obtain high resolution images. Both are seen as essential tools in the future management and maintenance of GIS produced resource data bases and mapping requirements. Plats will be developed using the same digital data for their base as GIS/LIS. Cartography and mapping will also utilize the GIS/LIS developed data bases and graphics capability for much of their work.

Automation appears to be a strong, new connection between the mapping sciences functions. Where operations have been primarily manual (plat drafting, mapping, and cartography), new skills will be required to successfully evolve to the coming automated environment. Coordination between the various functions will need to be excellent to ensure the most effective means of accomplishing a graphics task is selected. Cooperation in development, use, and management of common data bases will be essential.

There is also the possibility of increasing duplication and fragmentation of functions unless some positive efforts are made to integrate the mapping sciences functions more closely. Already, there are signs of potential new duplication of cartographic activities among GCDB and existing cartographic organizations.

All of this suggests that there may be a benefit from examining the mapping sciences functions to determine if the current organization of these functions is the most effective for the coming years.

Recommendations

Analyze the mapping sciences functions, organization, staffing, and future mission including their role in GIS and other automation initiatives to determine the most effective organization for the future.

- Review the current and future work activities and tools; identify staffing and skills concerns.

- Determine what interrelationships between the different mapping sciences organizations and functions exist now and will be required in the future.

- Examine organizational configuration and make appropriate recommendations to support LIS/ Modernization.

Coordinate findings with the Role/Function Study—Van Zanden.

Prepare appropriate amendments to the Bureau 1212 manual and Delegations of Authority.

Organizations Supporting Automation/Modernization

Washington Office LIS

Product Development

[illegible]

Implementation

[illegible]

Information Management

[illegible]

DGM at the Service Center

Product Management

[illegible]

Organizations Supporting Automation/Modernization

Washington Office LIS

Problem Statement

There is confusion about the long-range and short-range organizational placement and roles/functions of LIS at the WO level (thus Bureauwide). The components of LIS - GCDB, ALMRS, and ARD are organizationally embedded in traditional organizations, but are being included in new ways in new LIS organizations. It is not clear what aspects are the responsibility of traditional organizations and what should be managed under the LIS roles. If they are to be managed under an LIS organization, should this be just for the short run until LIS is established or should it be a long-range proposition?

Discussion

The confusion about LIS management arises because it is not clear if it is a system like the planning system, a process like the budget process, a single program like range management; a project with a definite sunset, or some combination of the above.

Some believe that by definition, LIS is a system where information is taken from all the components to make management decisions. Organizationally, however, the components are currently separate: GCDB is a Cadastral Survey function; ALMRS is a combination of Minerals, Lands, and Records; and ARD data must come from each individual program. The BLM planning system is analogous; each program provides input to the system for planning purposes, but multiple-use planning is organizationally a separate unit. The Bureau should decide if it wants to treat LIS the same way in the long run.

Others argue that the LIS components should all be in the same box and it should be managed as a program. This, they say, would permit the efficiency of developing policies and procedures for only one program and it could take on and be "sold" on its own identity. The difficulty is trying to separate what comes into LIS and what stays in traditional organizations. Conceptually, the whole Bureau could be considered an LIS organization.

Finally, others say that LIS is a project in the short run, but should be organizationally managed as a system (similar to the Planning System) in the long term. Under this approach in the short run, a Washington Office LIS unit would develop and implement policies and procedures for the system, but in the long run would utilize existing programs to provide input to the system. Then GCDB would become an integral part of Cadastral Survey, all of ALMRS would remain where it is, and all the resource programs would manage their contributions to the LIS. These people argue convincingly that it works for the Planning System, why not use the same model for LIS? They also argue that a small staff may be necessary to maintain the system but could in fact be placed in some existing organization such as Planning and Environmental Coordination.

Recommendations

Management research, using input from the Van Zanden Study (which does not cover the Washington Office or the Service Center), should prepare an organizational option paper that clarifies the short- and long-range organizational placement of LIS at the Washington Office level. There should be organizational consistency at all levels.

IRM at the Service Center

Problem Statement

In spite of some concerted efforts to clarify roles and responsibilities, there are still major concerns and confusions regarding the role of the Service Center as opposed to the role of the new WO LIS organization, WO 770, and Field Offices. This is most predominant in the area of policy associated with the developmental

Organizations Supporting Automation/Modernization

Washington Office LIS

Problem Statement

There is problem arises in the long range and short-range organizational planning and control functions of LIS. As the WO grows they do not [illegible]. The responsibilities of LIS, CCDB, ALMIS and ARD are organizationally [illegible] in the national organization. Further, [illegible] included in non-[illegible] LIS organizations. It is not clear what [illegible] the responsibility for [illegible] and who should be [illegible] under the LIS order. It may be [illegible] under an LIS organization, [illegible] or part of the [illegible] LIS is a [illegible] or should be a long-range [illegible].

Discussion

The [illegible] LIS management [illegible] is not clear. It is a system like the [illegible] system, a process like the budget process, a single program like a [illegible] program, a project with a definite [illegible], or some combination of the above.

Since it is clear that by definition, LIS is a system which automation is taking place all the components of [illegible] organizations [illegible]. In fact, the components are currently separate: CCDB is a Cultural Survey function, ALMIS is a [illegible] function, and ARD has most other functions of the [illegible] program. The [illegible] planning system is a [illegible] program provides input to the system for planning purposes, but [illegible] planning is [illegible] a separate [illegible]. The [illegible] should [illegible] LIS the same way as the [illegible] [illegible].

Other [illegible] that the LIS [illegible] should [illegible] in the [illegible] and it should be managed as a program. This way, [illegible] would provide the [illegible] of developing, [illegible] and [illegible] not only one program and it could take on and be "[illegible]" on its own [illegible]. The [illegible] is going to [illegible] who [illegible] LIS and [illegible] is [illegible] [illegible] Currently, [illegible] LIS is a special [illegible] [illegible] in [illegible] Systems in the [illegible] Systems [illegible] in the [illegible] LIS and [illegible] [illegible] in the [illegible] LIS [illegible] to provide [illegible] in the [illegible]. The [illegible] LIS would [illegible] [illegible] LIS [illegible] all of [illegible] [illegible] would [illegible] [illegible] [illegible] by LIS. These [illegible] [illegible] [illegible]

efforts. In many areas there is still confusion regarding who—the Service Center or WO—should be issuing policy.

Discussion

The scope of the ALMRS/LIS/Modernization project responsibilities has changed almost continually since its inception. From the original focus on ALMRS, at various times it has included GIS, GCDB, ARD, LIS, OA, MIS, and technical applications. Recently, the Service Center reorganized placing all automation, records, and natural resource functions in one organization. Within this organization, the LIS/Modernization effort was split between the three Divisions. Contract management, specifications development, and implementation are located in the Division of Modernization; developmental data modeling, data integration, ARD, records, natural resources, and GCDB are located in the Division of Data Management; and the Interim LIS including management of the Prime was placed in the Division of Systems Engineering with mainframe computer operations and support of ongoing Bureau automated systems.

There are three areas of concern:

- Role and responsibility of automation at the Service Center vis-a-vis the Washington Office.

  The managerial responsibilities exercised by the Service Center LIS/Modernization project have frequently crossed traditional lines of responsibility. The LIS/Modernization project has assumed responsibility for funding, strategic planning, marshaling resources and skills needed to complete its work, tasking work to others, etc. While these responsibilities are appropriate for a project effort, they are unusual in the Bureau. The recent establishment of an LIS staff in the Washington Office has added to the confusion. There has been an attempt to stratify the policy role between program (WO) and technical (SC) concerns. However, this leaves much to interpretation and consequently the confusion and overlap continues to be a problem. The role of the WO Program Leader, Specialist, and non-ADP managers in the policy and operational aspects of automation needs clarification both in relationship to WO 770 and WO LIS Staff, and to the Service Center LIS/Modernization effort.

  Traditional distribution of responsibilities between these levels is taxed by rapidly moving projects, evolving technology, changing organizational structures, and distribution of responsibilities. There is difficulty in sharing knowledge and information between the organizations in sufficient quantity and quality that decisions and policy are responsive to needs. Some people feel the Bureau decision-making process is ineffective in the current fast moving ADP developmental environment. They emphasize that policy must be timely; be tied with some precision to ongoing operations and the schedule for new system development, installation, and implementation; reflect the entire scope of ADP/IRM activities; and consider potential future impacts.

  In this context, policy for developmental efforts and ongoing operations, and overall ADP activities is intermeshed to a degree that does not easily allow separation of responsibilities in the traditional BLM way.

- Role and responsibility of the Service Center developmental functions vis-a-vis the field.

  Developmental efforts at the SC have been accused of occurring in isolation from field needs. Even the experiences from pilot and test sites seem not to be utilized or shared with other states. There is much to be learned from field efforts but lacking a systematic collection system and a commitment to use this information, we are destined to reinvent the wheel repeatedly.

- Role and responsibility of the Service Center in system implementation vis-a-vis States, Washington, and other groups.

There are more than a few people, groups, committees, organizations, etc., involved in various aspects of Interim and Target System implementation planning. The actual responsibility for developing an implementation plan is becoming increasingly confused. The dispersion of responsibilities without a clear set of objectives, action plan, or time schedule appears to be a growing problem. Again there is a question of how (and if) the products produced by the many involved groups, people, and organizations will be used, and whether implementation plans will be developed in a manner that maximizes use of all the commissioned products and the experiences of pilot and test sites.

There are mixed expectations regarding the disposition of expertise currently resident at the Service Center. The field believes that implementation should be supported with a migration of the Service Center LIS/Modernization expertise to the field. There is no evidence that the Service Center plans coincide with this expectation.

Recommendations

Develop a detailed responsibility matrix for functions in debate between WO LIS Staff, WO 770, and the Service Center. Include a range of decisions for data administration, long range planning, strategic planning, procurement, budget management, implementation, management of automation, management of developmental activities, etc.

- Formalize this matrix as part of the 1210 and 1216 manuals.

The Service Center should increase efforts to support, document, and share information learned at test, pilot, and demonstration sites.

- Provide documentation assistance to the official test/pilot/demonstration sites as needed.
- Provide timely response to the test sites regarding use of documented information.
- Maintain a systematic log of reports and how the information was used (or why discarded).
- Systematically share the results with every state.
- Implement recommendations for pilot and demonstration projects outlined below.

Prepare a relational chart identifying the various groups, task forces, individuals, organizations, and contractors working on implementation functions, what their responsibilities are, what products are expected and when, what their reporting relationships are, and what their relationships to each other are.

- Distribute this chart to all involved persons including the demonstration and test sites, for comments and additions.
- Prepare recommendations, as needed, to ensure maximum effective integration of all efforts.
- Service Center should clarify plans to shift expertise to the field to support implementation.

Pilot/Demonstration Projects

Problem Statement

Some States are forging ahead on their own with innovative uses for the LIS data that has been developed, for the Prime Computer, and for other Interim data structures. Currently, unless the project is an "official" pilot or demonstration project, there is no mechanism to assure the successes or failures are shared or that the direction and scope of the innovations are compatible with the Bureauwide objectives for the Interim and Target System.

Discussion

There are only a few pilot and demonstration projects officially sanctioned by the LIS/Modernization project. The "official" pilot/demonstration projects are monitored directly by the Service Center IRM organization to

IRM ORGANIZATION STUDY

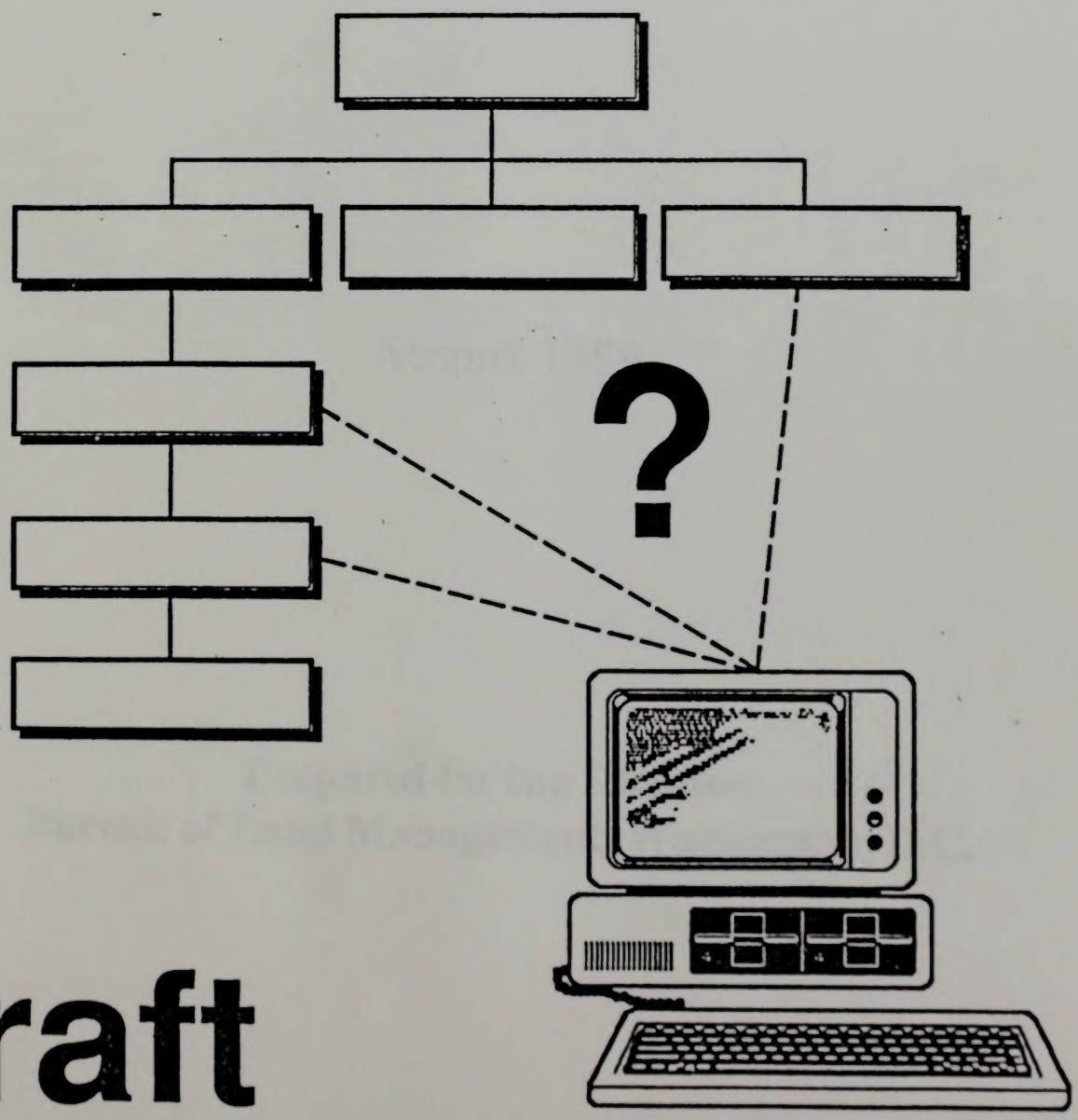
BUREAU OF LAND MANAGEMENT
U.S. Department of the Interior

from Rae

Washington Office | August 1989

IRM Organization Study

Impacts of Automation/Modernization on States, Districts, and Resource Areas



Draft

IRM Organization Study

Impacts of Automation/Modernization on States, Districts, and Resource Areas

August 1989

Prepared for the Director,
Bureau of Land Management, Washington, D.C.

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Executive Summary

Introduction

Background

The Bureau of Land Management has embarked on a major modernization effort to automate our lands and minerals, cadastral, resources, and administrative records and data. Collectively, these records and data have been termed BLM's Information Resources. The lead for developing and delivering the target system hardware and software has been assigned to the Service Center (SC) with oversight and advice provided by the Field Committee (FC). While that effort is progressing, it has become increasingly apparent the Bureau must successfully position its organization and work force to manage Information Resources in both the interim period and long-term when the target system is operational in the 1990s.

In a report titled "Impacts of Modernization and Automation on the Bureau of Land Management," a subcommittee of the Field Committee identified a number of Bureauwide problems related to delegation, accountability, communication, and organizational stability and recommended conducting a more specific study of the existing effects of automation and the effects that modernization will likely have on our Field Office organization structures. On the recommendation of the FC, the Director instructed the Assistant Director, Management Services, to conduct the study. The Headquarters Office Division of Management Research was given the assignment.

Study Objectives

The major objectives of this study were to:

1. Clarify the roles and relationships of all employees in IRM.
2. Identify the work to be done and the skills needed.
3. Develop recommendations on organizational structure in the Field Offices to best accomplish the Bureau's mission in an automated environment.

Study Approach

This study was done by a 13 member team under the direction of the Assistant Director, Management Services, with staff support from the Division of Management Research, WO840. The team was composed of employees from all three Field Offices levels and was lead by the Associate State Director from Idaho. Additional team members were selected to represent the Headquarters Office and the Service Center.

A Steering Committee was formed to provide advice and coordination for this study with the Bureau Management Team and the FC. Members of the Steering Committee included selected personnel from the subcommittee of the FC that recommended this study, two State Directors, a DSD for Administration, and the Service Center Director.
Field interviews were conducted with employees in all State Offices and a representative sample of District and Resource Area offices in each state. Managers, program leaders, technical ADP personnel, and users of automation were interviewed. The issues, recommendations, and alternatives discussed is this report result from information gathered during the field interviews.

Issues

Roles and Relationships

Successful management of the Bureau's information resources requires clear definition and consistent application of organizational functions and structures. Currently this is not the case. There is also little understanding or appreciation of the

roles and responsibilities needed to support IRM throughout the Bureau. As a result, IRM issues and functions are being operated in a disjointed and fragmented manner.

The study developed and verified a standard list of functions (work) to be accomplished by various position types, i.e., managers, technical ADP, program leaders, etc., at the Field office levels. It is recommended that this list be used for delineating organizational responsibilities and assigning accountability to positions through position descriptions and PIPRs.

Communication and Leadership

Throughout most States, Districts, and Area Offices LIS/modernization programs are not well understood; and the perception exists that there is an absence of clear leadership from many line managers to direct or carry out these programs. Automation/modernization efforts are often seen in conflict with current work.

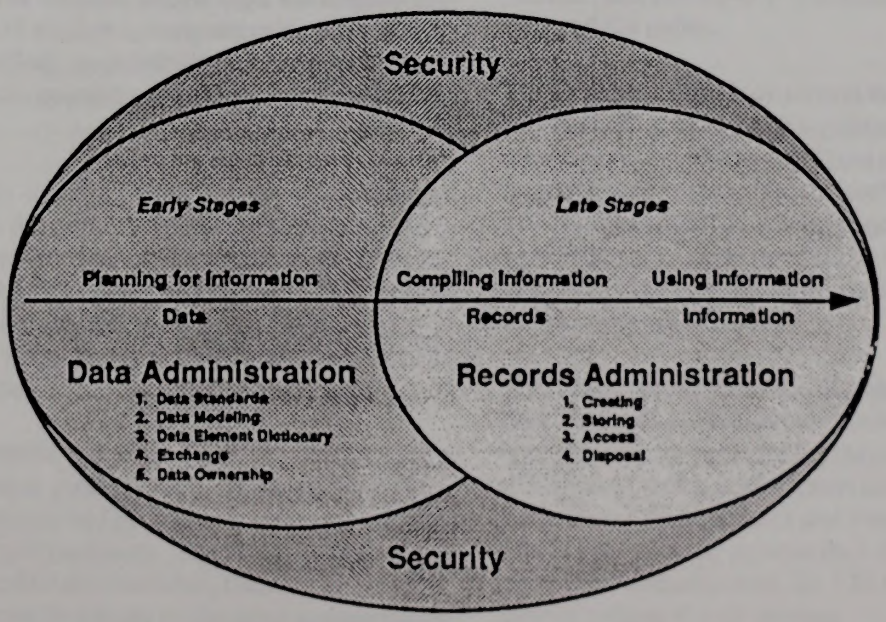
The Team recommends the Bureau promptly undertake a coordinated and well planned information sharing campaign through established Bureau information channels. This should include broad distribution of Bureau Information Bulletins and Instruction Memoranda, distribution of general information brochures, and use of such training/educational devices as "road shows,", videotapes, and special seminars or local information sharing sessions. These efforts should be directed to all employees, not just those who appear to be most involved or most interested in automation and should be in familiar, non-technical language.

Note to the Reader:

As the Team began analyzing Data Administration, Records Administration, and Security issues, it became clear there exists a very close relationship among these three elements in planning for and managing our information resources. The Data Administrator is heavily involved in the early planning stages by developing standards, a Data Element Dictionary, data modeling, exchange procedures, etc. It is not possible for the Data Administrator to properly plan for the data without knowing what the ultimate use of the data will be and who will be authorized to use it. Once the data is collected and entered into the system according to prescribed standards, it can be assimilated into a usable form; a record. The creation, maintenance, use and ultimate disposal of records is the second critical link in the management of information. The Records Administrator cannot design a useful electronic records management program without understanding and adhering to the principles of data administration. The third element to consider is Security. Security issues are considerations that must be made at every step in planning for and managing our information resources.

The following illustration graphically displays these relationships. The issues and recommendations concerning Data Administration and Records Management were developed with this relationship in mind.

Information Resources Management
Data/Records/Security



Data Administration

The roles and functions of Data Administration are not well understood, and this problem intensifies the lower one goes in the organization It is clear that the issue is not only the Data Administration functions and *where* Data Administration belongs in the organization, but also *how* it relates to the Records Administration and Security functions; whether they should be together or apart organizationally; and the organizational placement needed to ensure that the functions operate effectively.

The Team recommends that each Field Office establish a Data Administrator position with the functions clearly defined. This position may be full-time or a collateral duty depending upon local circumstances. The Team further recommends that the Data Administrator, Records Administrator, and Security functions be placed in the same organizational unit and may in some instances be the same position.

Records Management (Administration)

The automation of records creates a totally new dimension to the way the Bureau will conduct business. There is a need to define the new responsibilities of records management/administration to meet the demands of automation, to move our records program into BLM's automation/modernization era and to establish the relationship between records, data administration, and security.

The management of electronic records is a new frontier, not only to BLM but all Federal agencies. The technological advancements in records creation, use, storage, and disposal are demanding that BLM employ a comprehensive records program. Functions include responsibility for policy and guidance across the entire spectrum of records management/administration.

It may be difficult for existing Records Managers to make the transition to the new Records Administrator's role without extensive training, education, and skills development. We must begin planning now for necessary training or recruitment for the management and analytical skills needed to develop program policy and direction for the management of our records, information, and data.

The Team recommends that each Field Office establish a Records Administrator position with clearly defined functions. This position may be full-time or a collateral duty depending upon local circumstances. The Team further recommends that the Records Administration, Data Administration, and Security functions be placed in the same organizational unit and may be collateral duty positions in some offices.

E.Role of Coordinators

Problem Statement. The role of the various IRM related coordinators has become clouded with the evolution of automated systems, needs, and time. A major concern of managers, throughout BLM, is the proliferation of "coordinators." The question that surfaces is whether the existing coordinators are still needed; and if so, for how long.

Presently, the Bureau recognizes a number of IRM related coordinators. They include LIS, GIS, GCDB, ALMRS, ARD, and various others. The Study Team found that these individuals have, in many cases, migrated to non-coordination, operational roles. They have become the operational part of the effort rather than performing the coordination functions.

The Team recommends that all coordinators' positions except the LIS coordinator be examined to determine the functions they are performing. In instances where coordinators have assumed operational responsibilities the positions should be retitled to accurately reflect the work being done. The retitled positions should be placed within the existing organizational structure following established lines of authority.

LIS Coordination

LIS related functions are presently spread throughout the organization. The LIS component (ALMRS, GCDB, ARD) leaders and other affected parties in the LIS are not always communicating effectively with each other. Information about the LIS activities taking place in the various locations must be gathered and conveyed to managers, employees, other agencies, and the public.

The LIS coordinator is the closest thing the BLM has to a "true coordinator" at this time. It is primarily one of advocacy, communication, and education. There are little if any operational responsibilities presently associated with the LIS coordination role. Unlike other "coordinator" positions, the LIS coordinator will likely be needed for the long term. As the LIS continues to grow in visability and importance, the LIS coordination role will increase substantially.

The Team recommends the Bureau institutionalize the LIS coordinator as a true system "coordinator" position with responsibilities for coordinating the budget, training, policy and guidance, planning, user support and evaluation needs of LIS. Each State Office, District and Resource Area Office should identify a position to serve as the LIS coordinator. Depending upon local circumstances, the LIS coordinator may be a full-time or collateral duty position.

ADP User Support (Technical Services/ Applications Assistance)

One of the most frequently mentioned frustrations encountered at all levels of the Bureau is the difficulty ADP user have in obtaining prompt, competent, basic technical ADP assistance. The problem is intensified by the fact that many field offices have few or no staff who are technically trained in ADP.

In this study two types of user support are defined: Technical Services and Applications Assistance. In its broadest interpretation technical services includes: all types of installation, operation, troubleshooting, maintenance, and repair of hardware, software, and communications equipment, systems design and configuration management and programming. Applications assistance includes: developing applications using standard approved software, data entry, and processing data and answering user's questions about specific applications. Technical services support is typically provided by a technical ADP person and application assistance by program leaders.

The overriding Team recommendation is that on-site technical service and applications assistance support be provided at all offices. This is clearly an important issue now, and will become more important as we move toward the implementation of the target system. User acceptance of automated systems and the development of a computer literate work force is essential for the Bureau's future. Bureau managers must take action by providing both types of capable and responsive on-site user support.

Quality Control

Automated systems, unlike manual systems, will not function unless quality standards are met for data, configuration of hardware and software, and systems operation and documentation.

Given the vast quantity and unique complexity of BLM's data and the decentralized nature of BLM's authority to many offices, there must be a special effort to establish and assure the discipline necessary to adhere to quality control policies and procedures.

The Team recommends that an effective quality assurance program be developed and implemented that clearly assigns quality control responsibilities throughout the Bureau.

Classification and Other Personnel Actions

Functions for automation must be incorporated into the Bureau's Personnel system including functional statements, position descriptions, vacancy announcements, KSAs, and PIPRs. Many of these functions relate to classification, particularly for new technical IRM/ADP positions. The Bureau must develop a strategy to resolve the problems around the impact of the modernization on position classification and other personnel actions.

The Team recommends that model personnel documents such as position descriptions and evaluation statements be developed. These documents should be used to establish positions and to ensure consistency in our classifications, recruitment and skills identification requirements.

Skills Acquisition

This study identifies the work/functions needed for automation/modernization in BLM. The strategy for acquiring the skills needed to perform these functions has yet to be developed.

The Team recommends Bureauwide integrated strategy for acquiring needed automation related skills. This strategy should include training, contracting, and recruitment.

Mapping Science

Mapping science will have an increasingly important role in resource management as LIS and modernization develops. Currently, the mapping science functions are highly fragmented. The automation of these functions provides the opportunity to more readily integrate them to provide a higher level of support. This also is an area where some efficiencies can occur by consolidating staffs, cross training, better utilization of equipment, space, more timely products outputs, etc. There are some advantages in external working relationships (e.g. USGS) by developing a mapping science focus Bureauwide.

The study team recommends each State Office evaluate its current organization and potential work load, and develop a plan for incorporating the appropriate functions into a mapping science unit.

IRM Organizational Alternatives

Clarification of IRM functions will go a long way toward solving the issues presented in this report. However, one primary issue confronting the study team was, "How can the Bureau be best organized to use IRM tools to assist in its resource management mission?" The variety of answers to this question is evidenced by the variety of IRM organizational arrangements existing in field offices. Some states have or propose to centralize IRM functions while others have distributed IRM related responsibilities among existing organizational units at the State, District, and Resource Area levels.

During this study strong feelings were expressed about centralization and the potential for a Division of IRM. Those in opposition often cited the possible overallocation of resources away from on-the-ground resource management and the potential that a separate IRM organization would become too isolated from the people it serves to be responsive to their needs. There was recognition of the potential for gained efficiency, standardization, and improved coordination when all LIS/IRM responsibilities are centralized.

The Team recommends the following organizational structure for IRM in the field offices:

Within the State Office:

- Maintain the primary components of the existing organization structure.
- Place IRM technical responsibilities as defined in the "Role and Responsibilities" of Chapter II, A within an IRM Branch in the Division of Administration.
- LIS Coordination, Records, Security, and Data Administration functions would be assigned to a staff reporting directly to the DSD Administration.
- The LIS Coordinator would develop policy and guidance for integrating ALMRs, GCDB, and ARD into LIS.
- The IRM Branch would provide technical user support throughout the State Office.
- Technical services support as defined in Chapter II, G. would be provided by Computer Assistants located within user Divisions as demand dictates.
- Policy and procedural guidance for GIS would be provided by the IRM Branch.
- Operational aspects of existing systems such as ALMRS, GIS, and GCDB would be located out of IRM and with the primary users of the system.

Within the District Office:

- Maintain the primary components of the existing organizational structure.
- Place IRM technical responsibilities as defined in the "Roles and Responsibilities" Chapter II A. and LIS Coordination within an IRM Branch in the Division of Administration, or in smaller Districts without an IRM Branch, in a staff reporting to the ADM for Administration.
- Records, Security, and Data Administration functions would be combined to the degree possible and would report to the ADM Administration.
- The IRM Branch or staff would provide technical user support throughout the District office.
- User assistance as defined in Chapter II G. would be provided by Computer Assistants located within other Divisions as demand dictates.
- LIS Coordination would be provided by the IRM Branch or staff .
- Operational aspects of existing systems such as ALMRS and GCDB would be in existing Divisions and located as close as possible to system users.

Within the Resource Area:

- The demand for computer skills will depend on the amount of IRM activity, number of employees, amount of hardware/software, applications, etc. As appropriate, an IRM person/staff would report to the Resource Area administrative staff leader or the Area Manager.
- The Resource Area IRM staff would perform collateral duty in LIS coordination, operational aspects of GIS and user support.
- Operational aspects of ALMRS and application assistance would be accomplished in the Resource Area by resource specialists.

The rationale for the recommended alternative is based on the

following concepts. Based on past experience, there is a need to strengthen, consolidate, standardize and incorporate many of the new IRM functions into a more centralized structure. This would include the policy and guidance functions of data, records, security, and the coordination functions of LIS and would strengthen the ability to provide both technical and applications support to users. It would also significantly strengthen and make more visible the overall IRM functions as they relate to the traditional BLM mission.

The Team feels this alternative presents a significant and logical step given the current circumstances. Current circumstances include the Bureau's budget and how much should be allocated for IRM functions and the magnitude of organizational change. A significant amount of the current budget is already going toward the operation and maintenance of IRM. According to the most definitive analysis (IM 89-285), the total IRM cost for just IRM personnel Bureauwide is $40 million. The recommended alternative meets the functional objectives yet avoids the substantial costs of creating large new organizational units.

The Team also believes there needs to be a realistic view of the future and the need to take an evolutionary approach. The estimates of what the target system will look like, its performance capability, how much we can afford to buy, where it will be placed, implementation schedule, etc. keep changing. As the target system becomes clearer, functions and structure may change; but for now, the recommended alternative is considered a significant step forward but avoids a giant lurch — perhaps backwards.

The current attitude of Bureau employees is another consideration. It is not so much that people at the field level are against automation-modernization, but because of their motivation to get things done. They get upset when they perceive funds going toward something they either don't understand or don't want to understand. The point is, there are strong, pervasive attitudes which will be impacted by organizational changes. Depending on the magnitude of change and how people perceive they will be impacted, there may be either positive or negative reaction.

The recommended alternative will produce the desired functional results, make needed organizational shifts without major adverse impacts on the budget, is within the decentralized context of the existing structure, will reduce negative reactions and will help the field employees understand and accept how IRM relates to their getting things done.

Some argue that IRM needs high visibility organizationally because it is so important to BLM's outside image. The Team feels this is a misconception. IRM is a term which relates to the importance of BLM internally managing its information resources. As such, it is everyone's business, but IRM is not an image builder. LIS which produces visible outputs and services is an image builder. This is the concept the Bureau should pursue. The recommended alternative incorporates this idea.

Other Issues That Go Beyond the Scope of the Study

While doing the field interviews, two issues were raised by field offices that are not within the scope of this study. These issues are presented here without analysis for information purposes only.

Three-Tiered Field Office Organizations

Employees raised questions about changing the current three-tiered field organization. Some employees believe the organization could be flatter and more efficient. A study of this issue was completed in 1981 concluding that the 3-tier structure was still viable. Automation will in doubt continue to impact the organization. However, automation is only one of many factors which should influence a decision to change the 3-tier structure. These factors were outside the scope of this study.

Automation - Modernization vs. Budget

Many employees in the field offices are concerned about the large costs for automation/modernization that the Bureau is planning. This is of particular concern since most field level funding is coming out of base program dollars. The priority for implementation is also important to field level managers and program specialists who would like to see the priorities developed from the bottom up.

I. Introduction

Background

The Bureau of Land Management has embarked on a major modernization effort to automate the lands and minerals, cadastral, resources, and administrative records and data. Collectively, these records and data have been termed BLMs' Information Resources. The lead for developing and delivering the target system hardware and software has been assigned to the Service Center (SC) with oversight and advice provided by the Field Committee (FC). While that effort is progressing, it has become increasingly apparent the Bureau must successfully position its organization and workforce to manage Information Resources in both the interim period and long-term when the target system is operational in the 1990s.

Automation has already had a major impact brought on by the proliferation of hardware and applications in Field Offices, (State Office, District Office, and Resource Areas). In some instances new organizations have been established or are proposed to meet the needs of these Offices as they relate to Information Resources Management (IRM). There are wide variations in approach, placement of IRM, and functions assigned at each level. This has been recognized by the Bureau Management Team (BMT), and the Field Committee. In a report titled "Impacts of Modernization and Automation on the Bureau of Land Management", a subcommittee of the Field Committee identified a number of Bureauwide problems related to delegation, accountability, communication, and organizational stability and recommended conducting a more specific study of the existing effects of automation and the effects that modernization will likely have on our Field Office organization structures. On the recommendation of the Field Committee, the Director instructed the Assistant Director, Management Services to conduct the study. The Headquarters Office Division of Management Research was given the assignment. Instruction Memorandum No. 89-59, dated October 25, 1988 announced the beginning of this study, the content of which is summarized below:

Study Objectives

A. Clarify the roles of line managers, program leads/specialists, and technical ADP people in automation at the three Field Office levels to support the Bureau mission.

B. Identify the automation functions (work), to be performed at each field organization level.

C. Identify the automation related skills needed at each Field Office level to get the work done.

D. Develop recommended and alternative organization structures related to automation needs for each Field Office level.

E. Develop recommendations on how to acquire needed automation skills.

F. Recommend steps to develop position descriptions, classification and identify skill types.

Scope of the Study

This Bureauwide study focused on automation related functions and organizational issues at the State Office, District Office and Resource Area levels.

Assumptions and Sensitivities

The following assumptions were made at the beginning of this study:

A. Current delegations of authority to State Directors regarding organization will not change.

B. This study will recognize there are variations in size, workload, and organizational structure between and among the different Field Offices.

C. This study will recognize that different levels of awareness, computer literacy, and hardware/software capability exist throughout the Field Offices.

D. The pressure will increase for the Bureau to successfully develop and implement the Target System:

- Congressional interest
- OMB oversight
- Need for organizational understanding and stability

E. Momentum for automation and organizational change to accommodate automation will continue to increase regardless of any studies.

F. The Target System will be basically distributed with the capability to process information at each Field Office location.

G. The Bureau will evolve through interim and into the Target System. Recommendations in this study will be based on what is currently known and done and by projecting future needs.

H. The basic three tiered Field Office structure will not be addressed in this study.

I. The Bureau will continue to utilize a variety of mechanisms to get needed skills including in-house cross training. No major dislocation of existing employees will occur because of automation.

J. Beyond increases associated with the current ALMRS strategy, there will be no major increase in funds/FTE to meet staffing needs specifically for automation . However, staffing will continue to increase for automation work based on specific program needs.

K. Automation is a tool to be used by resource managers to achieve the basic Bureau mission of resource management.

L. Information Services will be directed by line managers with staff support based on resource needs.

M. Automation includes all systems: ALMRS, GCDB, GIS, ARD, administrative applications, telecommunications etc.

N. There is no predetermined conclusion about a single RIGHT organization structure for IRM in Field Offices.

Study Approach

This study was done by a thirteen member team under the direction of the Assistant Director, Management Services with staff support from the Division of Management Research, WO-840. The team was composed of employees from all three Field Office levels and was lead by the Associate State Director from Idaho. Additional team members were selected to represent the Headquarters Office and the Service Center. Team members are listed in Appendix A.

A steering committee was formed to provide advice and coordination for this study with the Bureau Management Team and the Field Committee. Members of the steering committee included selected personnel from the subcommittee of the Field Committee that recommended this study, two State Directors, a DSD for Administration, and the Service Center Director. Members of the steering committee are listed in Appendix A.

Methodology

The study was conducted in three major phases:

- Scoping and Preplanning
- Information Gathering
- Analysis and Report Writing

During the Scoping and Preplanning phase, the team preliminarily identified the issues to be addressed in the study, formulated a study plan, identified information needs and designed a method to gather the data for the report.

A thorough review of past analyses and actions taken by the various Field Offices, the Service Center, IRMAC, The Hofman Subcommittee of the Field Committee, Information Resources Management Reviewes (IRMRs) and other agencies regarding their IRM functions and organizations was done by the team. From that effort came the first indication that the issues discussed in this report are real issues that the Bureau needs to resolve.

With a preliminary list of issues in mind the team then developed an instrument for gathering necessary information and devised a strategy to gather the information in the Field Offices. A field interview guide was developed and tested in Oregon during the week of February 27, 1989. The interview guide was then revised as necessary and finalized for use in the

remaining states. One key component of the interview guide was a listing of IRM related functions with responsibility for performing those functions assigned to various position types in the Field Offices, (ie Program Leader, Technical IRM, Management, Records Mgr. etc.). By using this approach, the team was able to verify the findings of previous analyses regarding the IRM related functions and who is or should be primarily responsible for performing them.

The second phase of the study, Information Gathering, was begun by conducting personal interviews at selected field locations. Each State Director was asked to identify offices within his juristiction for the team to visit. Initially, six State Offices; Alaska, Wyoming, New Mexico, Eastern States, Idaho, and Arizona, were visited along with a representative sample of District Offices, plus attached and detached Resource Areas in each state. Interview teams, made up of two people from the study team visited the selected offices. Employees in each office were interviewed in separate small groups composed of program leaders, technical IRM personnel, knowledgeable users, and management. State Directors and District Managers were interviewed individually when possible. Each interview team used the standard interview guide developed by the study team to gather its information. Upon completion of these visits, the team reconvened in Salt Lake City during the week of April 10, 1989 to analyze its findings and develop preliminary recommendations including organizational charts. At that time the team also met with and discussed its progress with the Steering Committee.

Following the team meeting in Salt Lake City, the remaining states; Colorado, Utah, California, Nevada and Montana were visited. The same categories of people were interviewed as in the first group of states, however a slightly different information gathering technique, "modified nominal group," was employed. Using this technique the interview teams were able to independently verify the existence of the issues discussed in this report. In addition, these groups were also asked to comment on the teams' grouping of IRM related functions with position types and the preliminary organization charts developed by the study team at the Salt Lake City Meeting.

To complete the third phase of the study, Analysis and Report Writing, the team met in Boise, Idaho during the week of June 19, 1989. At that meeting the team analyzed the information collected, developed draft findings and recommendations, and wrote this draft report. The results of the study were presented in draft form to the Steering Committee on June 28, 1989.

It should be noted that throughout the course of the team's field visits, several issues were identified that are beyond the scope of this study. Those issues are presented in the Executive Summary for information purposes but are not analyzed.

II. Issues

A. Roles and Relationships

Problem Statement

Successful management of the Bureau's information resources requires clear definition and consistent application of organizational functions and structures. Currently this is not the case. Information Resource Management functions presently reside at all levels of the organization - whether it is operating a computer, programming, providing user support, data input, or training. However, these and many other IRM functions are not being done in a consistent manner; and the responsibility for some IRM functions is not always being accepted. There are also wide differences in the understanding and appreciation for the roles and responsibilities needed to support IRM throughout the Bureau. As a result, IRM issues and functions are being treated in a disjointed and fragmented manner.

Discussion

Because it was unclear what the various roles and functions related to IRM were and because many of these roles tend to blur and overlap, the team attempted to develop a standard list of roles and relationships (listed in the matrix below.) The resulting list was then tested by each group interviewed. They were asked to verify if the categories were correct, if the initial placement of the various functions was correct and if additional roles should be added.

The results for the most part, supported the list developed by the team. Many functions were identified that need to be accomplished at all levels, such as training, needs identification and user support. Some discrepancies were noted between where functions should be performed and where they are currently being performed. For instance, ADP personnel have the primary responsibility for user support on hardware and software, but in fact, when a pc goes down or needs work, a "local expert" is usually asked to help and technical ADP personnel are called only if the local program leader or staffer fails to correct the problem.

Some functions, for example, quality control, fall under several headings, i.e., xProgram Leaders, IRM Technical Personnel and Management. Virtually all the functions of Program Leaders, Managers, Records Managers and Users are similar regardless of the organizational level. However, efficiencies dictate that certain functions such as those under data admini-

stration, configuration management, etc. be performed at higher organizational levels rather than throughout the whole organization.

Recommendation

It is critical that the Bureau standardize IRM functions and incorporate these functions into the regular duties of specific catagories of positions at each organizational level. The Roles and Relationship matrix should be used as a source for delineating organizational responsibilities and for developing position descriptions and PIPRs at each of the field levels. Once these elements are in place, those assigned the work MUST be held accountable and given the necessary support to carry our their duties.

Roles and Relationship Matrix

The following functions are related to various aspects of Information Resource Management. These functions have been grouped into positions responsible for performing the work and the level in the organization where the work is accomplished:

Position/Function	State Office	District Office w/Mini	Resource Area w/Mini
Program Leader			
training (application specific)	X	X	X
user support (application specific)	X	X	X
budget development and tracking	X	X	X
establish quality control standards	X	X	
perform quality control	X	X	
program guidance	X	X	X
develop data standards	X	X	
monitor standards adherence	X	X	X
maintain data integrity	X	X	X
prepare functional requirements	X	X	X
contract administration (data collection/entry)	X	X	X
prepare and maintain user handbooks	X	X	X
evaluate use and effectiveness (app. spec)	X	X	X
project planning and execution	X	X	X
data access compliance	X	X	X
identify automation needs	X	X	X
Technical IRM People			
maintain operating system software	X		
maintain equipment operations	X	X	X
equipment installation and maintenance	X	X	X
user support/assistance	X	X	X
library/disk management (minicomputers)	X	X	X
training (minis and mainframe)	X	X	
integration and coordination of data bases	X	X	
maintain data base management system (DBMS)	X		

Position/Function	State Office	District Office w/Mini	Resource Area w/Mini
Technical IRM People (Continued)			
data base design	X		
develop data base documentation standards	X		
configuration management	X		
system analysis	X		
HW/SW use management	X	X	X
programming specific applications	X		
coordination among prog.syst, and applications	X		
write technical specifications	X		
test/accept HW/SW	X		
monitor contract performance (HW/SW procurement or maintenance)	X	X	X
integrate applications comprising a system	X		
data security and backup	X	X	X
SW licensing	X		
safety/disaster plan/security awareness	X	X	X
life cycle management	X	X	X
procurement planning	X	X	X
telecom system administration	X	X	
quality control for: (systems, documentation)	X		
recommend ADP components of IRM strategy	X		
data input/digitizing	X	X	X
contingency of operations planning	X	X	X
Management			
operating policy	X	X	X
resource allocation ($,people,space)	X	X	X
long/short range planning	X	X	X
priority setting	X	X	X
advocacy/leadership	X	X	X
quality control management (IRMR'S)	X	X	X
review/approve automation needs and IRM strategy	X	X	X
ensure standards and policy adherence	X	X	X
Records Administrator			
develop records operating policy	X		
develop procedures and standards for: (records creation, storage, disposal)	X	X	
coordinate with archives	X		
identify records automation needs	X	X	X

Position/Function	State Office	District Office w/Mini	Resource Area w/Mini
Records Manager (Continued)			
monitor standards adherence	X	X	X
evaluate use and effectiveness of records systems	X	X	
information classification (sensitive info.)	X		
perform quality control on records mgmt.	X	X	
Users			
equipment operation	X	X	X
microcomputer disk management and library	X	X	X
identify automation needs	X	X	X
prepare program requirements	X	X	
request/purchase approved software	X	X	
data collection, entry and backup	X	X	X
records creation, maintenance, disposal	X	X	X
quality assurance data and records	X	X	X
Data Administrator			
develop/implement data standards	X	X	
identify data ownership	X	X	X
data security procedures	X	X	
develop data exchange procedures	X		
implement cost recovery policy	X		
enforce data modeling	X		
DED administration	X		
enforce quality control standards	X	X	X
LIS Coordinator			
develop/maintain communications	X	X	X
coordinate LIS components	X	X	
perform outreach/inreach	X	X	

B. Communication and Leadership

Problem Statement

Throughout most State, District, and Area offices, the Bureau's LIS/modernization efforts are not well understood and the perception exists that there is an absence of clear leadership from many line managers to direct or carry out these efforts. Many employees view automation/modernization efforts as being in conflict with on-the-ground work.

Discussion

Because of automation, the Bureau is going through a period of prolonged and significant change that will affect the way we do business and effect the character of the Bureau culture. Bureau employees are being expected to learn to do their work with tools that are largely unfamiliar to many. Change at this order of magnitude is difficult and without the right kind of communication and leadership modernization will be difficult to implement.

It was not unusual during the field office visits to hear frustrations expressed in terms of not being informed, not being involved, or not seeing clear leadership for the modernization effort. The extent to which these themes repeatedly came forth from the majority of offices visited was surprising. The dominant themes were consistent and clear:

- There is a perceived lack of leadership, vision and commitment from key Bureau management officials for the Bureau's automation efforts.

- There is an insufficient quantity of well distributed, *non-technical* information being passed down to the field level offices. There is a noticeable lack of understanding of what is occurring at the Service Center and that is causing perceptions that field personnel are not involved in automation development, that systems are being developed that do not meet field needs, and that no one appears to know who is or will be in charge of where we are headed as a Bureau.

The Bureau has committed substantial resources from our funding over the past few years toward automation and modernization. This is evidenced by the great amount of activity being carried out at the Service Center and by the attention given to modernization by the Field Committee and its various subcommittees.

Much of the financial and personnel resources committed thus far have gone into the development effort at the Service Center. This has created its own set of problems in the view of field offices. The Field Offices believe this allocation of positions and funding to the SC reduces on-the-ground capabilities to accomplish BLM's primary mission of resource management.

The Bureau has also undertaken outreach efforts to involve and educate people outside the agency about our modernization and LIS activities. Substantial effort has been made to keep the Department, GSA, OMB, and Congress apprised. However, our internal education efforts have been insufficient. In fact, the field office visits often concluded by the interviewees stating the information exchanged through the interview process was the most they had ever received.

Some offices are better versed than others on modernization issues. It is also evident that some managers have recently initiated efforts to lead and manage to automation (attendance at Automation for Managers and Translators course has helped), but much of this effort is not yet visible to field level employees. The strongest sentiment expressed by some field employees is that key managers at various levels of the organization are not visibly leading the automation effort, do not understand that such leadership is necessary or don't personally have a commitment to automation.

Recommendations

1. Promptly undertake a coordinated and well planned information sharing campaign through established Bureau information channels. This should include broad distribution of Bureau Information Bulletins and Instruction Memoranda, distribution of general information brochures, and use of such training/educational devices as "road shows", videotapes, and special seminars or local information sharing sessions. These efforts should be directed to all employees, not just those who appear to be most involved or most interested in automation and should be in familiar, non-technical language. Employees need to understand the development processes, the plans that guide us, how automation will affect their jobs, and the vision for the future. This effort should be clearly defined in the Master Plan that is currently being developed and followed by specific Operational Plans developed by each State. Specific follow up in FY 1990 AWP of the recently conducted training needs analysis is essential.

2. Key program leaders and line managers from the State Offices, District Offices, and Area Offices must become knowledgeable about LIS/automation. They must provide an environment in their programs and offices in which an understanding and acceptance of automation is

fostered and its use is required.

3. State Directors, Associate State Directors, District Managers and Area Managers in particular, must provide visible leadership, involvement, and commitment to automation by personally demonstrating its use it in order to facilitate the cultural change that must occur.

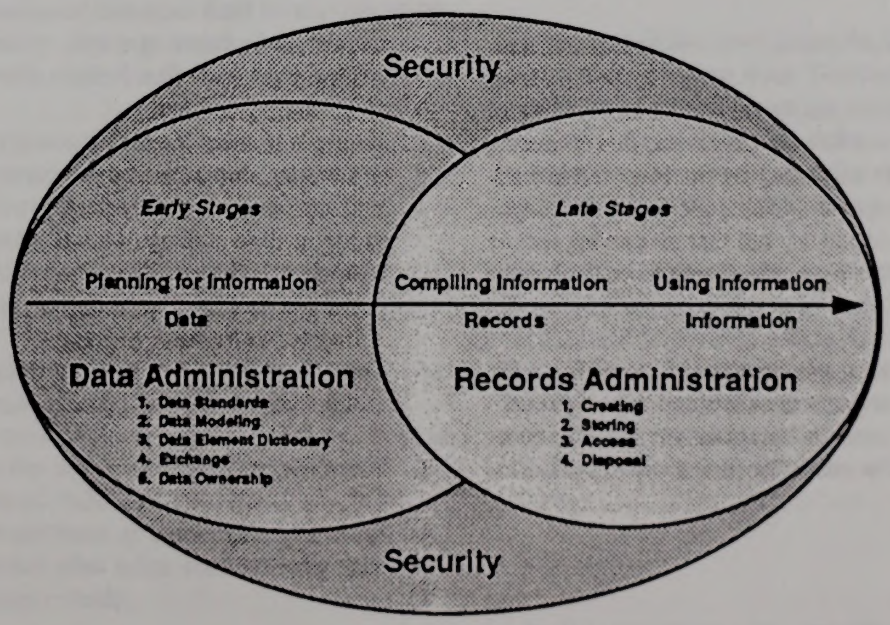
4. The roles and relationships identified for managers and program leaders in Section A (matrix) of this chapter should be adopted and included in functional statements, position descriptions and PIPRs as appropriate.

5. The Bureau must recognize that many Bureau managers are being faced with new and unfamiliar management demands,(e.g. managing rapidly changing technology, highly technical programs and people with a professional background much different than their own). Careful consideration should be given to providing managers a way to enhance their skills in this area. Perhaps the greatest challenge for BLM managers and supervisors is the willingness to accept and practice the collective discipline required to manage standardized data, configurations, quality control, life cycles and security.

Note to the Reader:

As the team began analyzing Data Administration, Records Management, and Security issues, it became clear there exists a very close relationship among these three elements in planning for and managing our information resources. The Data Administrator is heavily involved in the early planning stages by developing standards, a Data Element Dictionary, data modeling, exchange procedures etc. It is not possible for the Data Administrator to properly plan for the data without knowing what the ultimate use of the data will be and who will be authorized to use it. Once the data is collected and entered into the system according to prescribed standards, it can be assimilated into a useable form; a record. The creation, maintenance, use, and ultimate disposal of records is the second critical link in the management of information. The records Manager cannot design a useful electronic records management program without understanding and adhering to the principles of data administration. The third element to consider is Security. Security issues are considerations that must be made at every step in planning for and managing our information resources. A chart depicting the relationship among the three elements is shown below. The issues and recommendations concerning Data Administration and Records Management were developed with this relationship in mind.

Information Resources Management
Data/Records/Security



C. Data Administration

Problem Statement

The role and functions of Data Administration are not well understood and this problem intensifies the lower one goes in the organization. It is clear that the issue is not only the Data Administration functions and *where* Data Administration belongs in the organization, but also *how* it relates to the Records Management and Security functions; whether they should be together or apart organizationally; and the organizational placement needed to ensure that the functions operate effectively. The team also found that at this point there is little understanding or appreciation in the field offices for the amount of discipline and adherence to established standards each Bureau employee and office will need to build, maintain and use a bureauwide information system.

Discussion

Data Administration is described in the draft manual titled "Data Administration; State Office Data Administrator Duties" as: A Data Management function responsible for developing and implementing policies, guidelines and standards for the definition, collection, organization, correction, storage, protection, processing and efficient use of data and information within the Bureau of Land Management.

State Offices currently use both full time and collateral duty Data Administrators. The function is generally viewed as a coordination and facilitator role at all field levels with no operational responsibility. Many perceive data administration functions to be closely aligned with both users and program leaders.
To date, the primary focus of Data Administration has been on data standards development. Although this current effort is nearly 2 years old, the effort to define the scope and process of data standardization has been struggling. Part of the problem is that data standards cross organizational, program and even agency lines causing very difficult coordination problems.

Much of the Bureau's perception of data administration has been shaped by private industry. This corporate model of Data Administration does not fully meet the Bureau's needs because it fails to consider the diversity of local conditions and the decentralized nature of BLM's organization and delegations, and the laws and regulations governing BLM's official records. This perception also helps feed the misconceptions concerning automated records.

With automation, the need for quality control, standards adherence, and enforcement has greatly expanded. It is clear that the Records Manager, Data Administrator, and Security Officer, all have distinct but related responsibilities in providing oversight and guidance for the management of BLM information resources. The Records Manager must have authority similar to that of the Data Administrator in order to ensure that externally imposed legal requirements for records creation, maintenance, and retention/disposal are met. The responsibilities of the Data Administrator are different, in that they pertain to individual data elements as oppossed to a record which is a collection of data elements.

Success of the Data Administration function depends upon consistent application of data management standards and discipline throughout the Bureau organization to adhere to those standards. Regardless of where the Data Administration function is located, it must receive informed, visible support and clear direction from top management.

Alternatives

The alternatives and recommendations developed here are done so with the belief that neither the study team or the Bureau can fully comprehend or predict many of the future issues we must deal with as we automate our information. As we evolve into an automated information system, the organizational issues related to Data Administration and Records Management should be revisited on a frequent and regular basis.

Alternative I

At the State Office level, place the Data Administrator reporting to the Associate State Director. At this level the Data Administrator would have the ability to cross Division lines and have the authority to enforce the standards fairly and without question. The Data Administrator could interface and coordinate with the records management function through the DSD with responsibility for IRM. Under this alternative the team believes that further structuring below the State level should be left up to the individual State, dependent upon the level of activity within a District and the effectiveness of the State Data Administrator. Data Administration and Records Management functions are necessary at all offices below the State Office. District and Resource Area offices may wish to consider placing both functions with the same position.

Advantages:

- This alignment would provide more visibility for the Data Administrator and possibily more clout to the discipline

and enforcement part of the job.

- It would help the Data Administrator to become the moderator in situations where disagreement arose between other organizational entities during the development of standards and standards enforcement.

- It would help ensure against the Data Administration function aligning itself toward the organizational unit in which it was placed.

- This alternative would provide for uniform placement of Data Administration functions throughout the State Offices without changing the rest of the organization.

Disadvantages:

- There could be a perception that Data Administration was too powerful and too far removed from the users and resources it serves. The function over time could become self serving.

- This alignment would increase the span of control for the Associate State Director.

- With the Data Administrator reporting directly to the ASD, there is a strong possibility that decisions could be made regarding data administration without having the benefit of discussion by the remainder of the management team.

- This alignment would not provide a direct tie between Records Management and Data Administration.

Alternative 2

At the State Office, place the Data Administration function with Records Management and Security in a branch or staff within the Division that is responsible IRM but separate from the technical ADP people. At the District and Resource Area levels the individual states would determine their organizational needs related to data administration, records and security. District and Resource Areas may wish to consider combining these functions into the same position.

Advantages:

- Would utilize the existing organization structure and provide, through the Deputy, a voice on the Management Team to allow some measure of mediation between most of the serviced organizations.

- May reduce the perception that data administration responds only to the ASD.

- Would provide an immediate and direct organizational tie between the Records Management, Security, and Data Administration functions.

Disadvantages:

- The ability to exercise the enforcement responsibilities of Data Administration could be influenced by the Deputy responsible for IRM. There is some concern that this alignment would add an unnecessary layer of supervision to go through in the Data Adminstration process.

- Placement with responsibilities for security in the same Division as IRM may not encourage objective oversight and evaluation of security practices. Regulations require security to be placed outside the IRM organization.

Alternative 3

In the State Office place the Data Administration function, by itself, reporting to the Deputy responsible for IRM. Records Management and security would be placed in a branch within the IRM organization.

Advantages:

- Would provide added emphasis to the Data Administration function by itself.

- Would have the same advantages as those listed for Alternative 2.

Disadvantages:

- Would not insure good coodination between data administration and records management and security.

- Would have the same disadvantages as those listed for Alternative 2.

District and Resource Area Alternative:

The Team concluded that organizational placement of data

administration functions at levels below the State Office for most states is not a burning issue now. It is important to now place the functions with an enthused and informed individual. At both District and Resource Area levels full-time Data Administrators may not be required now. However the effectiveness of collateral duty positions will be directly related to the commitment made by local management to data administration.

Recommendation

The Roles and Relationships for Data Administration, defined in Section A of this chapter, should be adopted and included into functional statements, position descriptions, and PIPRs as appropriate.

Establish a management staff reporting to the Deputy State Director responsible for IRM. Duties of this staff would include Data Administration, Records Management, and Security. The success or failure of automation in BLM is dependent upon effective operation of these functions. Data Administration education is needed at all levels in the Bureau. For it to be effective, it must receive the direct support and guidance of the State Management Team.

Each District Office should designate a Data Administrator although the workload may not warrant the establishment of a full time position. Districts and Resource areas may wish to consider combining the Data Administration functions and the Records Management functions into the same position.

D. Records Management (Administration)

Problem Statement

The automation of records creates a totally new demension to the way the Bureau will conduct business. There is a need to define the new responsibilities of records management/administration to meet the demands of automation, to move our records program into BLM's automation/modernization era, and to establish the relationship between records, data administration and security.

Discussion

The management of electronic records is a new frontier, not only to BLM but all Federal agencies. The technological advancements in records creation, use, storage and disposal are demanding that BLM employ a comprehensive records program. Functions include responsibility for policy and guidance across the entire spectrum of records management/administration.

The primary responsibilities and functions of the State Office Records Administrator (Management Analyst) will be to:

- Define points of records creation, establish standards for records, identify legal and historical records requirements including sensitive information determinations, oversee or conduct risk analysis to ensure Bureau interests are protected, and ensure audit trail requirements are adequately satisfied.
- Determine the appropriate media for records.
- Ensure safekeeping of active records.
- Ensure backup copies are maintained.
- Interpret the sensitive information laws and regulations as applicable to electronic records.
- Oversee management of a combination of paper and electronic records to ensure a complete historical file is maintained.
- Manage disposition of mixed media records.
- Understand the various media available and prepare cost/benefit analysis.
- Review application documentation and user guides to ensure all records concerns are adequately addressed.
- Understand and give guidance on the environmental requirements essential to protect records on film, tape, or disk. Also to give guidance on paper record restoration and preservation.
- Design and implement a strong quality control program to ensure records creation, maintenance, and disposition are being performed in accordance with the best interests of the Bureau.
- Provide technical assistance, guidance, and quality control of District and Resource Area records activities.

District and Resource Area Records Managers will be expected to carry out the policy and guidance established at the

Headquarters and State Office levels.

BLM's records management responsibilities have far reaching significance in that we deal with many historical and unique records, e. g. land title records, cadastral records. Valuable documentation of land use decisions and historical land records can become lost if the correct decisions are not made regarding records creation, use, maintenance, and disposal. Critical decisions must be made to ensure that records are created in a format that is acceptable in a court of law as well as meeting historical and preservation requirements. Other Federal agencies, in particular the National Archives and Records Administration, are counting on BLM to be actively involved in establishing Federal electronic record management policies.

Many new records management problems will face us in the future as we begin to deal with electronic backups, filing, authorized and unauthorized access and alteration. Electronic records management will require new skills, greater expertise, professionalism, discipline, and problem solving abilities than BLM has previously required for paper records management. Our field interviews confirmed that few offices have taken steps and have received little or no guidance to employ records management principles within the realm of the electronic media.

The study has clearly indicated that a comprehensive management program does not exist in the records arena at the State Office level and below that can meet the challenge of managing the blend of paper and electronic records that is now beginning to occur.

Prior to the State Office Organizational Study of 1981, BLM recognized the importance of records and information management with the responsibility of the entire records program lying within the Branch of Records and Data Management, Division of Management Services. The focus of the 1981 reorganization, related to records management, was to place the custodial care of a particular record with the responsible organizational unit, i.e., maintenance of lands and minerals title records became the responsibility of the Branch of Lands and Minerals Adjudication. This concept has worked well in the years since the reorganization.

The field visits did serve to confirm and reinforce the need for the decentralized custodial care and operational aspects of records use and maintenance, (the day to day operations). It was widely agreed that these operational duties are best accomplished by those in the organization responsible for the information in the records.

Today, the management of paper records is a well defined technical function. BLM's current records managers at the State Office level are generally individuals responsible for the supervision of the library, central files, and mailroom. Up to this point, the records functions at the District Office/Resource Area level have been treated primarily as clerical.

BLM must work towards advancing our records management into an automation era. Records managers need to play an active role in the progression from a paper oriented office to a fully automated office environment. This includes the policy, guidance and oversight for all records systems, particularly those systems that are under the custodial care of other offices. The future will bring increasing decentralization of our records. More and more of our records will have to interface electronically, requiring standardization, data integrity, consistent records management procedures and the discipline to follow those procedures. This new approach might be termed "Research Administration" to parallel the same concept as "Data Administration."

BLM needs to have strong discipline, central oversight and guidance as techniques for electronic records management are developed and implemented. This responsibility will be far more complex, require a new set of skills, and probably new positions, in addition to those needed to perform the current paper records management responsiblities.

In defining the responsibilities of a records management/administration program, we must include not only data and records, but our data security needs as well. In reviewing the responsibilites outlined in the draft BLM Manual 1270 and the draft BLM Manual for Data Administration, many of the responsibilities correlate to the management of records and data as a valuable resource. This indicates that a close working relationship must be developed between the Records Administrator, the Data Administrator and the Security Officer.

It is important that we realize the time to take action is now as we are just beginning to establish records on media other than paper. Our risks are high if we do not acknowledge and implement a comprehensive electronic records management program.

Alternatives

Alternative 1

At the State Office, establish a single Records Manager/Administrator position reporting to the DSD responsible for IRM. District/Resource Area offices would increase the responsibilities of the existing records personnel to ensure

compliance with records policies and guidance. The operational records activities would remain in the custodial care of the organizational units responsible for the records.

Advantages:

- Would bring records management into focus with IRM issues.
- Recognizes the need for management skills within the records system.
- Ensures that the program management, policy making and planning is not subordinated by the operational needs of records management.
- Would provide transition of records management to the target organization.

Disadvantages:

- Position may tend to focus only on IRM related issues rather than the entire records program. Placement in the IRM organization may prevent development of a working relationship with the Data Administrator if the data administrator position is not organizationally placed in IRM.
- A single position buried within an IRM organization may not provide the emphasis that would be necessary to implement a records management program.
- May require creation of a new position or commitment to extensive training to provide incumbents with the skills necessary to perform the management and analytical responsibilities required.

Alternative 2

Assign the records management responsibilities to the Data Administrator position at the State Office level regardless of location in the organization. Maintain the current organizational responsibilities for records use and maintenance. The position identified at the District level to implement data administration policies would also handle implementation of records management policies.

Advantages:

- The data administration program is receiving emphasis as modernization approaches. Records management could take advantage of that emphasis.
- Many of the records functions are being identified by industry as data administration functions.
- Coordination of the Data Administration and Records Management functions would occur.

Disadvantages:

- In the short term, the data standardization process could overshadow the need for records management policy development.
- Records and information management may not receive the attention that is necessary to establish a comprehensive management program due to the emphasis being placed solely on data administration activities.
- Workload would eventually be too big for one position to handle effectively.

Alternative 3

At the State Office level, establish a management Branch or Staff for records, data administration, and security placed under the Deputy State Director that is responsible for IRM. This staff could also include the Statewide LIS coordination activities typically performed by one individual. The District Office would combine records management and data administration into a staff reporting directly to the District Manager or an Assistant DM reponsible for IRM. A larger district may need an individual position for data administration and records management. It should be noted that this staff would remain outside of the IRM organization to ensure their integrity. Custodial care of records remains decentralized. State Office staff would include a full-time position to serve as the Records Manager/Administrator for policy and guidance..

Advantages:

- Placement at a management level would provide access to all programs that will be affected by modernization. Places records management on the same level with other functions necessary to implement our target system.
- Staff would be independant from the operational activities. Emphasis would be placed on the importance of records and data to the target system.

- Provides the interim momentum necessary to discipline ourselves for the target system.

- Emphasizes statewide oversight and management of records and data by placing them in one organizational unit.

Disadvantages:

- There are no serious disadvantages for Records Management/Administration in this alternative.

Alternative 4

At the State Office level, establish a Branch of Records and Data Administration, reporting to the Deputy State Director responsible for IRM, that includes all forms of records, security and data administration. All operational record functions would be included within the Branch. At the District Office level, establish a position, within the IRM organization, to administer the records and data administration policies.

Advantages:

- Emphasizes statewide oversight and management of records, information, and data by combining them into one organizational unit.

- Provides for close coordination, consistent direction on all facets of records and data management.

- Ensures full utilization of the records and information available from all sources.

Disadvantages:

- Branch may become too operational. Program management, policy development and planning would take a back seat to the day-to-day needs of the technical records.

- Custodial users would lose control over their record systems. Integrity of the data may be questioned.

- Focus of the Branch may be too closely tied to the traditional administrative recordkeeping, when in reality the records needing the most attention will be in areas outside of Administration, e.g., lands and minerals, resources, cadastral survey, etc.

Recommendation

Establish a management staff placed under the direction of the Deputy State Director responsible for the IRM organization to that incluses records and information management, data administration, and security. Records management and data administration should immediately begin the coordination of their activities related to records and data management. Each District Office should designate a Records Administrator to follow through with the policies . At the District, these responsibilities at the onset should be assumed by the same position handling the data administration functions. A larger District may find it necessary to establish a full time position as we proceed toward implementation of the target system. Co-located Resource Areas would utilize the services of the District. Detached Resource Areas would identify a position to implement both records management and data administration policies. In both the District and Resource Area Offices, these positions should be independant of the IRM organization.

Adopt the Roles and Relationships identified for Records Administrator in Section A of this chapter. These requirements should be included in functional statements, position descriptions, PIPRs and recruitment actions for Records Managers as appropriate.

The Bureau must realize it may be difficult for existing Records Administrator to make the transition to the new Records Manager's role without extensive training, education, and skills development. We must begin planning now for necessary training or recruitment for the management and analytical skills needed to develop program policy and direction for the management of our records, information and data. ?

E. Role of Coordinators

Problem Statement

The role of the various IRM related coordinators has become clouded with the evolution of automated systems, time, and needs. A major concern of managers, throughout BLM, is the proliferation of "coordinators". The question that surfaces is whether the existing coordinators are still needed, and if so, for how long.

Discussion

The Bureau has traditionally used coordinators to fill knowledge and policy vacuums that result from new iniatives.

Coordinators are, for the most part, advocates used to facilitate communication and educate the organization. Coordinators are not operational staff, accountable for the program, and do not make management decisions. Managers have found that through the use of coordinators they can both emphasize a new effort, as well as keep track of it. As a new initiative is accepted and the manager's comfort level increases, the role of the coordinator evolves into a more operational role.

This evolution is taking place in the IRM field. Presently the Bureau employs a number of IRM related coordinators. They include LIS, GIS, GCDB, ALMRS, ARD, and various others. Many of these roles are dual hat. The Study Team found that these individuals have, in many cases, migrated from coordination to operational roles.

The roles that these individuals perform have been highly influenced by local circumstances and vary widely throughout the Bureau. In addition to the duties originally identified for these coordinators, they have also become important in such areas as policy and guidance, user support, application development, and equipment configuration. In many cases, this was critical to getting the job done and therefore, a necessary expansion of the coordination role. Because of the shortage of trained staff in the IRM field, this expansion was actively supported by management. These roles frequently cross into other organizational units.

Technology is advancing so rapidly that the need for coordinators will likely continue to meet the needs of new initiatives. Managers need the flexibility to address high priority programs and initiatives with this kind of special position. They also need to recognize when the narrowly defined role of the coordinator has been met and the responsibilities can be carried out by the operational units. Presently, with the exception of the LIS Coordinator, most coordinators are performing duties of specialists, program leads, or program managers.

Alternatives

Alternative 1

Continue the use of current IRM related coordinators until implementation of the Target System in the mid 1990's or until a component becomes operational.

Advantages:

- Provides focal point for informational material at the field level.
- Readily identifies point of contact for users.
- Performs internal and external outreach.

Disadvantages:

- Program Leaders and managers do not accept responsibilities for program management.
- Fails to recognize the operational significance of the functions performed by the Coordinator.
- Policy and guidance may be formed outside existing organizational lines of authority.

Alternative 2

Abolish all IRM related coordinator position titles, except the LIS Coordinator.

Advantages:

- Recognizes the significance of the operational responsibilities presently being performed by these positions.
- Places the position within an existing organizational line of authority.
- Program leaders and managers become responsible for program management.
- Management will be involved in all policy and guidance decisions.

Disadvantages:

- Confusion may result as to who handles the various components of LIS.
- Field offices will have several points of contact for user support and training.
- Program Leaders and managers may be reluctant to assume the remaining coordination role, particularly internal and external outreach.

Recommendation

First, identify the primary responsibilities and duties of those

individuals referred to as coordinators and assign an organizational title that reflects their actual duties. Second, any office that has used "coordinator" in the classification title should examine the position description and change the title and series as appropriate. Third, place the coordination function with the identified program manager, program lead, or specialist within the existing organizational structure following established lines of authority.

Suggested Organizational Titles and Placement

The primary duties of the ALMRS Coordinators have evolved into contract administration, supervision of land records personnel, data collection, budget program lead, technical specialist, and user assistance. The suggested organizational titles, depending on scope of responsibilities, would be ALMRS Manager, ALMRS Specialist, or ALMRS User Assistant. This would acknowledge the significant management and operational responsibilities that these positions have assumed. This position should be located in the same organizational unit as the Land and Mineral Records.

GCDB Managers are responsible for contract administration, program management, and supervision of a GCDB staff. The GCDB Managers are correctly titled and should not be referred to as a GCDB Coordinator. This position should be located in the Cadastral Survey organization.

At the State Office level, the GIS Coordinator furnishes user support and assistance, planning and direction for project proposals, application training and program focus. Suggested organizational titles should include GIS Manager, GIS Project/Program Lead, GIS Technical Specialist, and GIS User Assistant. These positions in the State Office should be placed within the IRM organization. The District/Resource Area GIS Coordinators should be retitled as GIS Project Leads or GIS Technical Specialists and should remain within the IRM organization. As BLM progresses in automation/modernization, more and more of the program leaders and specialists will become competent in GIS applications.

Mapping Science Coordinators are generally the cartographic supervisor or the position that provides mapping sciences support. The organizational title should not include the term Coordinator and the position should remain placed organizationally with the resources and people it supports the most.

ARD Coordinators are performing duties that are program leaders responsibilities. Referring to these positions as coordinators dilutes their primary responsibilities and disguises their benefit to the organization. These Coordinator titles should be abolished and the functions assumed by existing program leaders in their respective organizational units.

F. LIS Coordination

Problem Statement

LIS related functions are presently spread throughout the organization. The LIS component (ALMRS, GCDB, ARD) leaders and other affected parties in the LIS are not always communicating effectively with each other. Information about the LIS activities taking place in the various locations must be gathered and conveyed to managers, employees, other agencies, and the public.

Discussion

The LIS coordinator role is presently the closest thing the BLM has to a "true coordinator." It is primarily one of advocacy, communication, and education. Little, if any, operational responsibilities are now associated with the LIS coordination role. As the LIS continues to grow in visability and importance, the LIS coordination role will increase substantially.

The LIS envisioned by BLM is an extremely powerful and complex system made up of three separate components, (ALMRS, GCDB, ARD). Several other elements, (e.g. ADP equipment,skilled ADP personnel, software, Public Affairs, and skilled users), must also be included in planning for an effective LIS. Information residing in the data base of each component will be accessed and manipulated on demand, using software specifically designed for that purpose. Hardware capable of handling large volumes of information must exist and people who are technically competent in ADP must operate and maintain the equipment. The users of the system must be knowledgeable and skilled enough in the use of the system and its applications to make effective use of the LIS. Communication and education throughout the BLM concerning the development and implementation of the LIS is critical at this time. The LIS Coordinators must serve as the point of focus to bring all these parts together.

As the LIS becomes operational, coordination within the various components, support elements, and the user community may be simplified. The program managers and program leaders should assume those responsibilities within their own areas of jurisdiction. However, the need for LIS system coordination among the system components, support elements, and users of the LIS will likely intensify. The LIS Coordinator must assume these coordination responsibilities. Unlike other "coordinator" positions, the LIS Coordinator position will likely be needed for the long term. Depending on

BLM's long term strategy for LIS, it may become a very highly visible program and require a reevaluation of the LIS Coordinator role.

Alternatives

Recognizing the need for long term LIS coordination, the next questions are: what functions should be performed by the LIS Coordinator and where should the LIS Coordinator be located organizationally in our field offices?

Alternative 1 (Roles/Functions)

Alternative 1a. Make LIS Coordinator an operational position with responsibilities for implementing and managing the LIS including budget, training, policy and guidance, planning, user support, evaluation etc.

Advantages:

- Establishes one point of responsibility for all operational responsibilities related to the LIS.
- Places high visibility on the LIS as a Bureauwide information system and decision making tool.

Disadvantages:

- Removes responsibility and ownership of the system from the components and users.

OR

Alternative 1b. Continue LIS coordinator as a true system "coordinator" position with responsibilities for coordinating the budget, training, policy and guidance, planning, user support and evaluation needs of LIS with the three LIS components, the support elements and users.

Advantages:

- Provides a focal point for coordination of LIS functions.
- Keeps ownership of the system with the users.

Disadvantages:

- May be difficult for the LIS Coordinator to exert the amount of influence needed for this position on components and users.

Alternative 2 (Organizational Placement)

Place LIS coordination directly under the State Director/ Associate Director.

Advantages:

- Places high visibility on the LIS coordination function.
- May facilitate coordination across Division lines as the position would not report to a specific Division.
- Provides direct access to top level management for LIS activities.

Disadvantates:

- Increases span of control for State Director/Associate Director.
- May encourage decisions being made concerning LIS without full management team participation.
- Separates LIS coordination from components (ie GCDB, ALMRS, ARD), and users.

Alternative 3 (Organizational Placement)

Place LIS coordination functions under the DSD for Operations.

Advantages:

- In most states this would place LIS coordination functions in the same Division as most of the system components (GCDB, ALMRS, ARD). This may facilitate coordination among the components.

Disadvantages:

- Separates LIS coordination from most users, ie L&RR/

Minerals.

- Places LIS coordination separate from support elements, ie technical ADP.

Alternative 4 (Organizational Placement)

Place LIS coordination with the DSD responsible for the IRM organization.

Advantages:

- Places LIS coordination with IRM people. May facilitate coordination with the technical ADP element of LIS.
- Adds emphasis to LIS as an information management system.

Disadvantages:

- Separates LIS coordination from majority of users.
- Separates LIS coordination from LIS components.

Recommendation

Each State Office, District and Resource Area Office should identify a position to serve as the LIS Coordinator. This recommendation is made with the following conditions: the LIS coordinator should not to assume operational LIS functions, or evolve into its own organization.

The team recommends the LIS coordinator functions defined in Section A of this chapter be located immediately under the Deputy State Director having responsibility for IRM. In most offices below the State Office the LIS coordination function will require less than a full time position. However, the team recognizes the differences in LIS activity from state to state, and therefore recommends that State Directors retain and exercise their delegated authority as to how the function is staffed.

In addition to designation of the LIS Coordinator, each state should hold regular coordination meetings involving all components and support elements of LIS. These meetings are best chaired by the ASD or at a minimum, the DSD responsile for IRM. It is also recommended that to enhance the LIS outreach and inreach, the Public Affairs offices begin to play a larger role in the LIS communication and education.

G. ADP User Support *(Technical Services/Applications Assistance)*

Problem Statement

One of the most frequently mentioned frustrations encountered at all levels of the Bureau is the difficulty ADP users have in obtaining prompt, competent, basic technical ADP assistance. The need for technical assistance is usually related to microcomputer use, but can involve any type of ADP assistance. The problem is intensified by the fact that many field offices have few or no staff who are technically trained in ADP and this function is being performed by people trained and classified in non-ADP positions.

Discussion

In this study two types of user support are defined: Technical Services and Applications Assistance. In its broadest interpretation technical services includes: all types of installation, operation, troubleshooting, maintenance, and repair of hardware, software, and communications equipment, systems design and configuration management and programming. Applications assistance includes: developing applications using standard approved software, data entry, and processing data and answering user's questions about specific applications. Both types of support are needed.

In many field offices the technical services are being provided by "expert" users from within the office. These people take time from their regular duties to assist other users with ADP problems. Usually the services performed are at a moderate or low skill level and done at the expense of the expert user's regular duties. This fails to reflect the true cost of this support. In many instances, the demands placed on expert users for their assistance account for over half of their time. This is not to diminish the importance of the assistance they currently provide. During interviews, many people expressed the opinion that the best technical support comes from a resource person with technical ADP skills, rather than someone with only an ADP background. They felt that such a person understands the applications and needs of users better and communicates more effectively with them.

Some people carry this idea further by stating that a computer specialist with a resource background should be available to query and update data bases in support of managers, program leaders and specialists. This crosses over the boundary of technical service. The concern with this idea is that some managers, program leaders and staff specialists would like to avoid

dealing directly with automation and this is one way to do that. Such over reliance on support staff does not encourage the users to develop their own computer skills.

It is important that program leaders and staff specialists become familiar with those systems and applications that support their activities. The program lead who turns all responsibility for an automated system to a computer assistant will never fully understand the application and will be unable to provide the kind of program guidance and leadership required of them to modernize their program. Program leaders must accept and execute their responsibilities for automation by becoming knowledgeable as well as being leaders in automating the program areas they are responsible for. They must take the lead in defining applications, setting program priorities and developing the guidance necessary to effectively lead their programs. It is essential that the functions of applications assistance be performed by program leaders.

It should be acknowledged that much of the reason for the frustration and demand in user support is rooted in two facts. First the Bureau's work force is not as computer literate as it needs to be. Most Bureau employees have only begun using computers in the last few years and they are having to learn new skills and procedures to do their jobs. In less than five years the Bureau has gone from perhaps a few hundred microcomputers to nearly 5,000. This influx of equipment has added new skill requirements for employees to do their work. Many are frustrated in computer use by poor keyboarding skills and a general lack of basic understanding about computers and automated systems.

A second reason for the user support problem is the insufficient number of technical ADP support staff. The personnel reductions of recent years have made it very difficult in some offices to increase staffing in any of the technical services areas. New positions are frequently established at the expense of the traditional lands and resource program positions. Staffing for technical services support has not kept current with the number of computers and users to be supported.

Recognizing some overlap, there are two separate functions requiring separate skills. Technical Services is equipment oriented and requires ADP skills. Applications assistance is applications oriented and requires programming skills. Assuming that the program people will provide applications assistance and remain in their respective organizations, the main issue is where to place the Technical Services support functions. At State Offices and larger District offices the question of where to place the Technical services function is more of a problem than in smaller offices. It would be unwise to disperse the major technical ADP services functions away from the IRM organization. The IRM organization must be a cohesive unit in order to provide the leadership, technical skills and effective operational support needed to implement the target system. Dispersing the policy and procedures function to user offices would fragment the IRM functions and set up an inefficient and competitive situation. However, using the definition of basic technical services support, it may be desirable to place some level of user assistance directly with the users provided the function does not exceed its intended purpose and provided there is adequate local workload. It is essential that management and users exercise discipline and adhere to the limitations placed on technical services positions if they are established. Where central IRM staffs are needed, especially at District and Resource Area Offices, the Farmington Pilot Office can serve as a model. In that office, the following positions were added: Computer System Analyst, Data Base Administrator, Computer Allications Specialist, Computer Specialist and Cartographic Technician.

In considering the creation of computer assistant positions, managers should keep in mind that they will probably grade in the range of GS-5 to GS-7. This will change the situation at some Bureau offices where technical services assistance has been assigned to a resource specialist, GS 9 or 11, that has demonstrated ability and interest in automation. While the technical abilities of these individuals may be impressive, the fact remains that if their grade is based primarily on their ADP skills it will be difficult or impossible to justify their current grade.

Alternatives

The alternatives separate the technical services issue into two parts. State Offices and large District Offices and small District Offices and most Resource Area Offices. The size distinction between large and small offices is admittedly vague. Support needs should include considerations about number of employees, physical size and layout of the office, number and kinds of machines. distance and accessibility between users and the current support staff.

State Offices and large District Offices

Alternative 1

Establish a central technical services user support staff/branch in the IRM organizational unit. Responsibility of the people on this staff would be to provide technical ADP support to all users in the State or District office. There could be some specialization so that one person becomes familiar with the

operations of a specific organizational unit(s) and could be assigned to support that unit or specialization could be focused on hardware.

Advantages:

- There would be backup when a support person was absent.
- The support staff could assist and train each other.
- It could more efficient, as support staff could be shared.
- The support staff would have ready access to the rest of the IRM professional staff and could more easily stay abreast of current operations and guidelines.

Disadvantages:

- The user organizations would have no control over their support.
- The support staff could be lost to priority IRM work.
- User Divisions may be reluctant to provide funding and FTE to establish the positions in the IRM organization.

Alternative 2

Establish a Computer Assistant position(s) in each of the State Office Divisions. The purpose of this position(s) would be to provide basic technical services support. It is important to emphasize that this position(s) would provide all the basic technical services needed and would not do any system development or use other than standard microcomputer software, (e.g. dBase and Lotus). NOTE: Technical ADP support of a major nature such as systems design, major programming, data base administration etc. would be provided from the central IRM organization.

Advantages:

- The end users would have greater control over their own technical services work.
- The Computer Assistant would be available for operational work within their own unit.
- The technical services positions would be located closer to the users they support and would become more knowledgeable and efficient.

Disadvantages:

- The Computer Assistant would be somewhat isolated from other IRM professionals. It would be more difficult for them to keep current on ADP operations and policy guidelines.
- The position could become too operational. Some users may rely upon this position to perform ADP work they should learn to do themselves.
- The need for user assistance as defined may diminish as staff specialists become more computer literate and program leaders are able to assume their responsibilities related to ADP. As that occurs, continuation of a user assistance position may become less justifiable.

Smaller District Offices and Resource Area Offices:

Alternative 3

Only one viable alternative for small District Offices and Resource Area Offices was identified:

Establish and staff a central organization to provide all ADP support for the office. In many cases, a 1 to 3 person staff can service an entire office in situations where the individual program units are not large enough to justify their own technical service staff. The organizational location of the central staff should be consistent with the State Office organizational structure.

A commitment to technical services support and applications assistance is essential. In very small offices, (<15-20 people) it may be necessary to combine technical and application support for users. The individual in these positions must be fully trained and allowed the time needed to meet their responsibilities.

Recommendation

The overriding recommendation is that on-site technical service and applications assistance support be provided at all offices. This is clearly an important issue now, and will become more important as we move toward the implementation of the target system. User acceptance of automated systems and the development of a computer literate work force

is essential for the Bureau's future. Bureau managers must take action by providing both types of responsive on site user support.

For State Offices and large District Offices alternative 2 is recommended. The team recognizes that unique situations exist at various offices and believes that the local managers are best able to determine which organizational units in their office require their own technical user assistance positions. It is essential however, that managers recognize and support the limitations placed on these basic technical service positions within the context of the overall ADP support functions.

For small District Offices and Resource Area Offices alternative 3 is the only viable solution identified. The team believes that offices cannot continue, in the long run, to rely on partial solutions, such as expert users. The difficult decisions must be made to provide skilled user technical service and applications assistance at all field offices.

H. Quality Control

Problem Statement

Automated systems, unlike manual systems, will not function unless quality standards are met for data, configuration of hardware and software, and systems operation and documentation.

Given the vast quantity and unique complexity of data and BLM's decentralized delegation of authority, there must be a special effort to establish and assure the discipline necessary to adhere to quality control policies and procedures.

Discussion

The two aspects of maintaining quality are: quality assurance and quality control. The difference is subtle but distinct. Each is defined as follows:

Quality Assurance. A planned and systematic pattern of actions necessary to provide confidence that the system conforms to established technical requirements. It is the guidance or framework used to ensure that quality control mechanisms are actually used. Quality Assurance is a management responsibility.

Quality Control. The mechanisms used to ensure that completed products (e.g., data bases) meet established standards. Quality Control is a technical IRM function.

It is important to note that adherence to management direction and technical quality control procedures is the responsibility of every user of BLM's automated systems. Users must assure that the data is of sufficient quality to meet their needs. This is particularly true as the Bureau moves into exchanging and selling electronic information. Maintaining quality is directly related to ownership of the data. For example, program leaders and specialists who own their data and rely on it will maintain the integrity of it.

Data

Experience has shown that the most costly and time consuming aspect of running applications relates to data accuracy. Currently the functional roles necessary to achieve quality assurance and quality control are unclear.

Given BLM's decentralized delegation, managers are ultimately responsible for quality assurance. Therefore managers must become knowledgeable of the data and make sure that an effective quality assurance program exists. The Data Administrators must guide the overall development of data standards, publish them in the Data Element Dictionary (DED) and establish data ownership. The various program leaders must develop their data standards and provide guidance for their use in specific program areas. Technical IRM people must establish standards and operating procedures for data base administration- systems for running specific data.

The users' primary responsibility is one of adherence to data standards and operating procedures. For example, when entering data they must conform to the standards and check the correctness of their entries. It is not possible to overstate the need for discipline throughout the bureau when it comes to assuring the integrity of the data. For example, we are often faced with decisions regarding how "good" the data has to be. We have information that has been collected over the years at different scales, stored on a variety of mediums, and may even be of questionable origin. Managers, Data Administrators and program leaders must decide what data is automated and set the standards that are going to be met. In order to make intelligent decisions we need to understand the long term impacts of entering poor quality data into the system. Resource management decisions are only as good as the information upon which they are based.

System Design and Documentation

The technical IRM people have a different role to play in quality control. It is not the data that they are primarily concerned with. They are responsible for ensuring that sys-

tems (HW/SW) and applications are designed, documented and functioning properly. They must ensure that the quality of a system and its documentation meet acceptable standards.

Recommendations

1. Assign responsibility to the proper managers for ensuring that a comprehensive quality assurance program for IRM is developed and implemented.

2. Assign responsibility to the appropriate ADP people for ensuring that systems are satisfactorily built and documented. Hold them accountable for the quality of the systems and documentation.

3. Assign responsibility for the overall development of all data standards, documenting data standards (data element dictionary) and enforcing standards to the Data Administrators.

4. Assign responsibility to program leaders for setting data standards and for developing and implementing quality control mechanisms related to data in their specific programs. This would also apply to Records Administrators.

5. Assign responsibility to all users to become knowledgeable of pertinent quality control requirements and to adhere to those requirements.

I. Classification and Other Personnel Actions

Problem Statement

Functions for automation must be incorporated into the Bureau's Personnel system including functional statements, position descriptions, vacancy announcements, KSAs, and PIPRs. Many of these functions relate to classification, particularly for new technical IRM/ADP positions. A strategy is lacking to resolve the problems resulting from the impacts of modernization on position classification and other personnel actions.

Discussion

As we defined the work to be done in automation/modernization, who will do it, and where it will be placed organizationally, we can then logically and realistically apply these definitions across the Bureau in the Personnel System. Classification from a human resource management perspective is the first stage of the personnel process. Out of this process, duties are defined, skills and knowledge are identified, and the parameters for evaluating an employee are determined. From this initial personnel action, staffing, employee development and employee relations are impacted.

The Bureau has been struggling with classification and other personnel issues relating to IRM positions in isolation. Each manager/supervisor has approached IRM positions from the vantage point of immediate operational needs. Also, classifiers and staffing specialists have not had much experience with technical ADP positions. The Bureauwide strategy must meet immediatle needs plus the goals and objectives of the Target System.

Based on the impact of the classification process on other areas of human resource management, the amount of time spent developing a consistent approach that addresses the skills and position requirements of the Target System is not wasted.

This brings into focus once again the need for managers and supervisors to personally become knowledgable about our current and projected automated environment. To varying degrees, BLM classifiers and personalists have been able, through thoughtful sessions with subject matter experts and reading the available literature, to make distinctions on issues relating to IRM and reach an understanding about the nature of the work in order to classify positions.

As we achieve model organizational structures, we can also develop model position descriptions and uniformity in classification of the work. This approach addresses the needs of an integrated system and recognizes the value of consistency in classification to promote equal pay for equal work. This argument is based on efficiency and economy of operations through organizational stability and improved morale since employees interpret consistent application of the classification standards as being evidence of equitable treatment.

Recommendations

Based on the recommendation for a model organizational structure, functional statements should be developed and work identified and described. It is recommended that model position descriptions and evaluation statements be developed recommending position classification (title, series, and grade). These documents should be used to establish positions and to ensure consistency in our recruitment and skills identification requirements.

NOTE: The A.D. Management Service has already initiated action on this recommendation.

J. Skills Acquisition and Development

Problem Statement

This study identifies the work functions needed for automation/modernization in BLM. The strategy for acquiring the skills needed to perform these functions has yet to be developed.

Discussion

Based on field office visits, there is a wide range of automation knowledge and skill among employees. This is true at all organizational levels and occupational series. Some employees have brought to the Bureau, or developed while here, a wealth of knowledge and expertise, while others lack even basic automation skills, e.g., keyboarding.

The current approach to meeting skill requirements is through a variety of training vehicles including self development. Much of this training has focused on PC training. Technological advances in field offices will require additional skill levels. However, until the Field Committee initiated a training needs analysis for LIS, there were no consistent, Bureauwide analysis of training. Hopefully, new systems will provide a higher level of user friendly interface that will decrease the cost of training and eliminate some of the frustrations associated with the introduction of new automated systems. Employees interviewed understand the need for self development and that training, as it relates to IRM, will be ongoing as hardware/software advances are made.

Skill deficiencies in the Bureau vary from basic keyboarding to highly technical areas. This was verified by the "Training Needs Analysis for the Interim Land Information System" prepared by the Phoenix Training Center. The results show training deficiencies across the Bureau. Estimates are that 1/3 to 1/2 of the Bureau's work force will need some type of IRM training. The employee development process must place much more emphasis on automation/modernization work. Based on skills needed to accomplish the work, training assessments can be made. State Office Employee Development/Training Specialists also need to understand this new emphasis.

The WO training function has recently been elevated organizationally and will report directly to the AD Management Services. This Bureauwide focus recognizes the crucial nature of training when implementing a major Bureauwide system. Technical IRM employees need to maintain their technical specialties. This is particularly important as the Bureau implements the interm system and moves toward the target system. Technical staff must also have communication skills to pass on technical information to managers, program leaders and users in all levels of the organization.

Planning for training is just one aspect of an integrated skill acquisition strategy.

Recruitment planning will also be necessary to begin meeting skill needs. Training, retraining or "growing our own" will not meet all our skill needs. Retraining may be appropriate to improve basic computer literacy, but the Bureau must begin to plan for the recruitment of the more highly skilled technical computer professionals.

Contracting for needed skills is a third option to consider in planning. It is possible that some automation related work presently being done in house could be done more efficiently and cost effectively by contract. This option should be considered for large data entry jobs and even for day-to-day computer operations.

Alternatives

Alternative 1

Each office continue to identify and acquire needed skills in their own way at their own pace.

Advantages:

- Provides maximum local control to local managers to acquire skills
- Skill requirements and acquisition can be tailored to specific local circumstances.

Disadvantages:

- Does not encourage a consistent Bureauwide approach or end result in skills acquisition.
- Is less efficient because of duplication of effort.

Alternative 2

Develop a Bureauwide integrated strategy for skills acquisition that includes contracting, recruitment, and training.

Advantages:

- Provides consistency in approach and end result.
- Eliminates duplication of effort.

Disadvantages:

- Local managers may lose some flexibility in acquiring needed skills.
- Will require a sizeable initial commitment of time from people tasked with developing strategy.

Recommendations

Develop a Bureauwide integrated strategy for acquiring needed automation related skills. This strategy should include training, contracting, and recruitment. Following is a partial listing of actions the team feels should be included in the strategy.

1. Develop a modified version of the "Road Show" which can be incorporated into existing training and orientation modules. This would be especially appropriate in the Employee Excellence (EE) seminars for new and existing employees.

2. Continue to offer the PTC course "Automation for Managers and Translators" or redesign that course for more localized use. Utilize the concepts of "Train the Trainer" and provide each SO with course materials and lesson plans. Each state could modify its content to their specific current and planned modernization efforts.

3. Implement the recommendations of the Training Needs Analysis for the Interim LIS in each year's AWP.

4. Each State Office should focus its Human Resource Development capability on the following as they relate to automation/modernization skill acquisitions:

   a. Teaching/Instructing/Learning - design, develop, conduct, and evaluate learning experiences.

   b. Consulting - assist managers and supervisors in developing their employees to meet the needs of the Bureau.

   c. Career development or career counseling.

   d. Program Management - assist managers in their management responsibilities, including budgeting for the needed training and course identification.

   e. Administrative - paperwork processing of training forms, facilities and equipment needs for course presentation, etc.

5. Each State Management Team should develop guidelines for IRM training. This should include who should go, when to train, and follow up actions.

6. Since IRM technology is constantly changing, BLM managers must make a commitment to provide adequate time for training professional IRM employees to keep them current with new technology.

7. Each State should develop a recruitment plan to address future IRM skill needs. Recruitment should include traditional methods such as cooperative agreements with universities and colleges, on-campus interviews, student trainees, direct hire authority, and in-house efforts such as establishing upward mobility positions and career counseling.

8. Each State should analyze its work, evaluate the potential for contracting and develop plans for appropriate contracts.

9. Managers should continue to emphasize and encourage all employees to utilize self development techniques, such as correspondence courses, local college courses, tutorials, and on-the-job training.

K. Mapping Science

Problem Statement

The mapping science will have an increasingly important role in resource management as LIS and modernization develops. Currently, the mapping science functions are highly fragmented. The automation of these functions provides the opportunity to more readily integrate them to provide a higher level of support for all Bureau resource programs.

Discussion

Generally the mapping sciences umbrella includes remote sensing, aerial photography, photogrammetry, cartography, plat drafting, map preparation, and graphics. Typically, States have individually distributed these functions among a variety of organizations. In the past, coordination among the different mapping sciences components has not been a primary need, thus it is often weak. Some functions have not been staffed or are seldom used. Currently, use and location of remote sensing and aerial photography are often dependent on the chance of resident skill some place in the organization. Plat drafting and cartography are rarely combined; graphics is located in a variety of organizations.

The development of automated means to portray land and resource features ties these functions together in a new way. They will be using common data bases, often building on a common digital data bases, often building on a common digital base map that is tied to geographic coordinates. Work is underway to develop a means to convert satellite imagery data to the digital data used in the Geographic Information System applications. Satellite imagery and aerial photography are converging in their capability to obtain high resolution images. Both are seen as essential tools in the future management and maintenance of GIS produced resource data bases and mapping requirements. Plats will be developed using the same digital data for their base as GIS/LIS. Cartography and mapping will also utilize the GIS/LIS developed data bases and graphics capability for much of their work.

Automation appears to be a strong, new connection between the mapping sciences functions. Where operations have been primarily manual (plat drafting, mapping, and cartography), new skills will be required to successfully evolve to the coming automated environment. Coordination between the various functions will need to be excellent to ensure the most effective means of accomplishing a graphics task is selected. Cooperation in development, use, and management of common data bases will be essential.

There is also the possibility of increasing duplication and fragmentation of functions unless some positive efforts are made to integrate the mapping sciences functions more closely. Already, there are signs of potential new duplication of cartographic activities among GCDB and existing cartographic organizations.

All of this suggests that there may be a benefit from examining the mapping sciences functions to determine if the current organization of these functions is the most effective for the coming years.

Alternatives

Alternative 1

Keep the functional components of mapping science separate organizationally.

Advantages:

- More visibility for each part of the program.
- Can track funding to a greater level of detail.
- Easier to focus on separate components.

Disadvantages:

- More difficult to integrate efforts.
- Less flexibility to shift skills, funds, people.
- More difficult to integrate technology.

Alternative 2

Integrate the functional components into an organizational entity for mapping science.

Advantages:

- Much greater capability to manage the components.
- Much greater ability to focus all components on specific goals and objectives requiring all parts.
- Can utilize the automated technology much more efficiently across all components.
- Can provide cross training and increase backup.

Disadvantages:

- Each component lacks some visibility/identity.
- More difficult to track funding by component.
- More difficult to focus on system components.

Recommendations

Currently the organizational arrangements for mapping science differ in each state. The trend should be toward consolidating functions as the work need progresses for : Resources base data maps, digitizing, GCDB related maps, automated plat drafting etc. Also this is an area where some efficiencies can occur by consolidating staffs, cross training, better utilizations of equipment, space, more timely products outputs, etc. There are some advantages in external working relationships (e.g. USGS) by developing a mapping science focus bureauwide.

Each State Office should evaluate its current and potential work load, and the considerations above and develop its own plan for organizing the mapping sciences functions.

III. IRM Organizational Alternatives

Introduction

Clarification of IRM functions will go a long way toward solving the issues presented in this report. However, one primary issue confronting the study team was, "How can the Bureau be best organized to use IRM tools to assist in its resource management mission?" The variety of answers to this question is evidenced by the variety of IRM organizational arrangements existing in field offices. Some states have or propose to centralize IRM functions while others have distributed IRM related responsibilities among other organizational units at the State, District, and Resource Area levels. The Alaska State Office, with its Division of IRM is an example of a centralized organizational structure. State Offices with a small Branch of Information Services and user support positions distributed to other Divisions and Districts are an example of a more decentralized IRM organization.

Most states currently have a Branch of Information Services within the Division of Administration. However, their capability and their assigned responsibilities also vary from all the IRM functions to only computer operations and procurement assistance.

During this study strong feelings were expressed about centralization and the potential for a Division of IRM. Those in opposition often cited the possible overallocation of resources away from on-the-ground resource management and the potential that a separate IRM organization would become too isolated from the people it serves to be responsive to their needs. There was recognition of the potential for gained efficiency, standardization, and improved coordination when all LIS/IRM responsibilities are centralized.

One concern is the need for flexibility and consistency in looking at organizational alternatives. Flexibility allows offices to assess their own strengths and weaknesses and adjust their organizations to their needs as well as funding and FTE limits. Conversely, the advantages of some degree of organizational consistency are clear. In a program of this magnitude and impact both now and in the future, many people feel there has to be organizational consistency and stability and point to the current problems BLM is having in IRM to support their view.

Another concern in determining the IRM organizational structure is BLM's style of management. BLM's present organization is decentralized with emphasis on providing maximum management and operational authority to on-the ground managers. Until recently, IRM was an exception in that management and operational responsibilities were usually retained at the State Office with little responsibility at the District or Resource Areas. This was in large part due to funding and staffing limitations as well as the evolving nature of IRM in the Bureau. This centralization is rapidly changing. With the proliferation of microcomputers and minicomputers in the District and Resource Area Offices, people in these offices have a strong desire and perceive the need to manage and operate their own IRM organization.

All of the organizational alternatives listed including the recommended alternative, generate other concerns about current staffing capability. For instance, some DSDs Administration currently lack adequate knowledge and experience in managing information resources. At the District and Resource Area levels most Administrative heads are one to two grades lower than their counterparts in other program areas and may lack the management experience desirable for managing a complex IRM program in addition to their existing workload. Some of the DSDs for Operations are similarly unfamiliar with the LIS effort and already manage a very large, complex division in most states. Establishing new Divisions without abolishing existing Divisions would create needs for new DSD and ADM positions and support staff. Filling the DSD position on a State Management Team with promising IRM branch chiefs, a non-technical manager or someone from outside of the Bureau all present some concerns. Creating a new IRM Division and combining the remaining functions from Operations and Administration promise major disruptions for many people in the field offices. The challenge for the Study Team became how to translate these concepts and concerns into an organizational design that will facilitate the effective management of the

Bureau's total automation-modernization (IRM) effort.

Recommended Alternative

The objective of this alternative is to balance the new requirement of IRM with the existing BLM organizational concepts of decentralization and delegation of authority in a manner which utilizes past experiences, current capability, and a realistic view of the future.

Within the State Office (Illustration 1a)

- Maintain the primary components of the existing organization structure.
- Place IRM technical responsibilities as defined in the "Roles and Responsibilities" of Chapter II,A within an IRM Branch in the Division of Administration.
- LIS Coordination, Records, Security, and Data Administration functions would be assigned to a staff reporting directly to the DSD Administration.
- Develop policy and guidance for integrating ALMRs, GCDB, and ARD into LIS.
- The IRM Branch would provide technical user support throughout the State Office.
- Technical Services Support as defined in Chapter II,G would be provided by Computer Assistants located within user Divisions as demand dictates.
- Policy and procedural guidance for GIS would be provided by the IRM Branch.
- Operational aspects of existing systems such as ALMRS, GIS, and GCDB would be located out of IRM and with the primary users of the system.

Within the District Office (Illustration 1b)

- Maintain the primary components of the existing organizational structure.
- Place IRM technical responsibilities as defined in the "Roles and Responsibilities" of Chapter II.A and LIS Coordination within an IRM Branch in the Division of Administration, or in smaller Districts without an IRM Branch, in a staff reporting to the ADM for Administration.
- Records, Security, and Data Administration functions would be combined to the degree possible and would report to the ADM Administration.
- The IRM Branch or staff would provide technical user support throughout the District office.
- User assistance as defined in Chapter II,G would be provided by Computer Assistants located within other Divisions as demand dictates.
- LIS Coordination would be provided by the IRM Branch or staff.
- Operational aspects of existing systems such as ALMRS and GCDB would be in existing Divisions and located as close as possible to system users.

Within the Resource Area (Illustration 1c)

- The demand for computer skills will depend on the amount of IRM activity, number of employees, amount of hardware/software (HW/SW) etc. As appropriate, a person/staff would report to the Resource Area administrative staff leader or the Area Manager.
- The Resource Area IRM staff would perform collateral duty in LIS coordination, operational aspects of GIS and user assistance. Operational aspects of ALMRS would be accomplished in the Resource Area by resource specialists.

Advantages:

- Concentrates most IRM technical responsibilities in one organization.
- Facilitates coordination of IRM policy, standardization and related activities.
- Improves user acceptance and support.
- Requires managers to become more involved in basic IRM issues and management.
- Impacts the existing organization the least of all alternatives.
- Locates user support/assistance as close to the users and program leaders as possible.

Illustration 1a

State Office Recommended Alternative

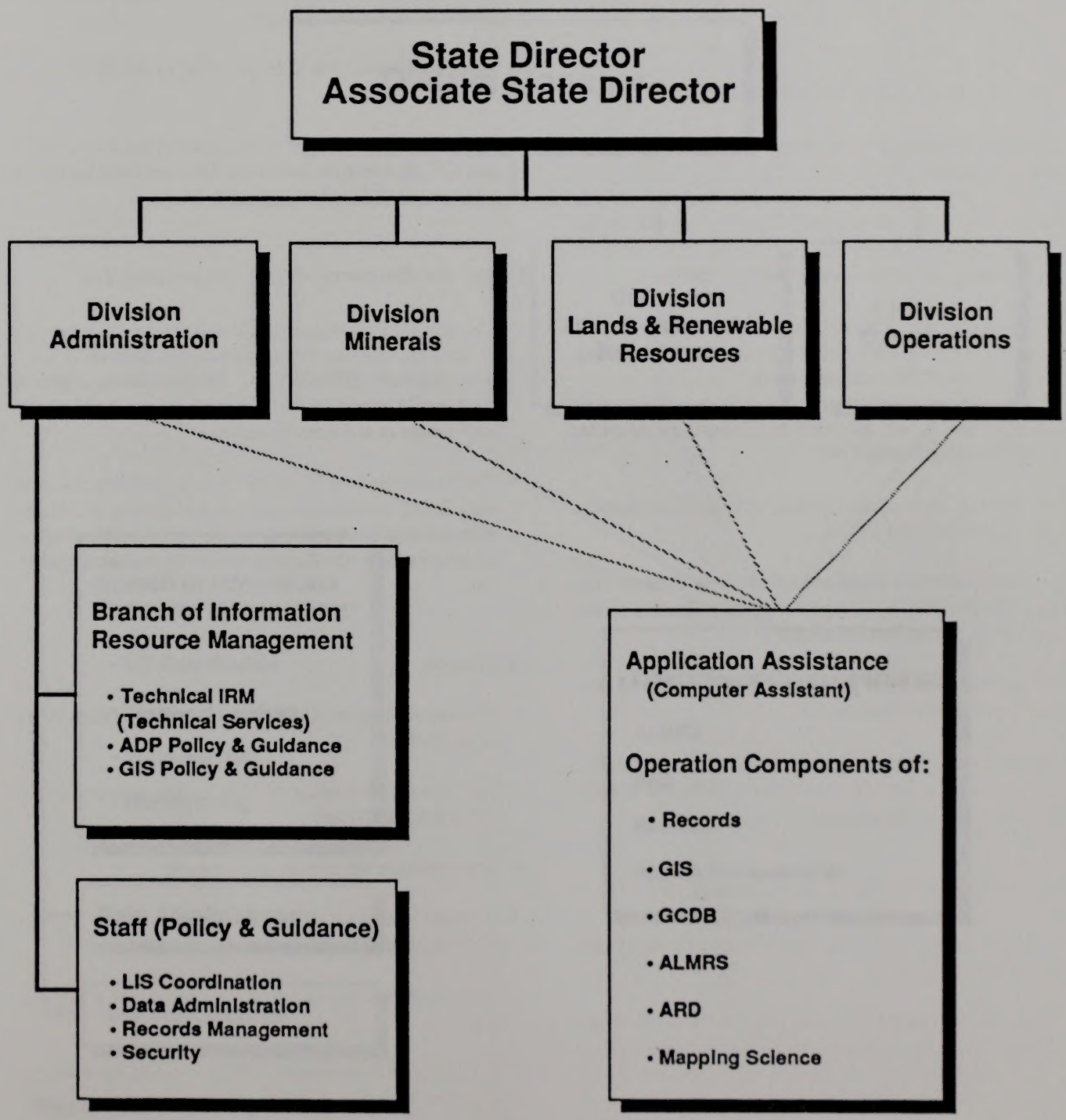
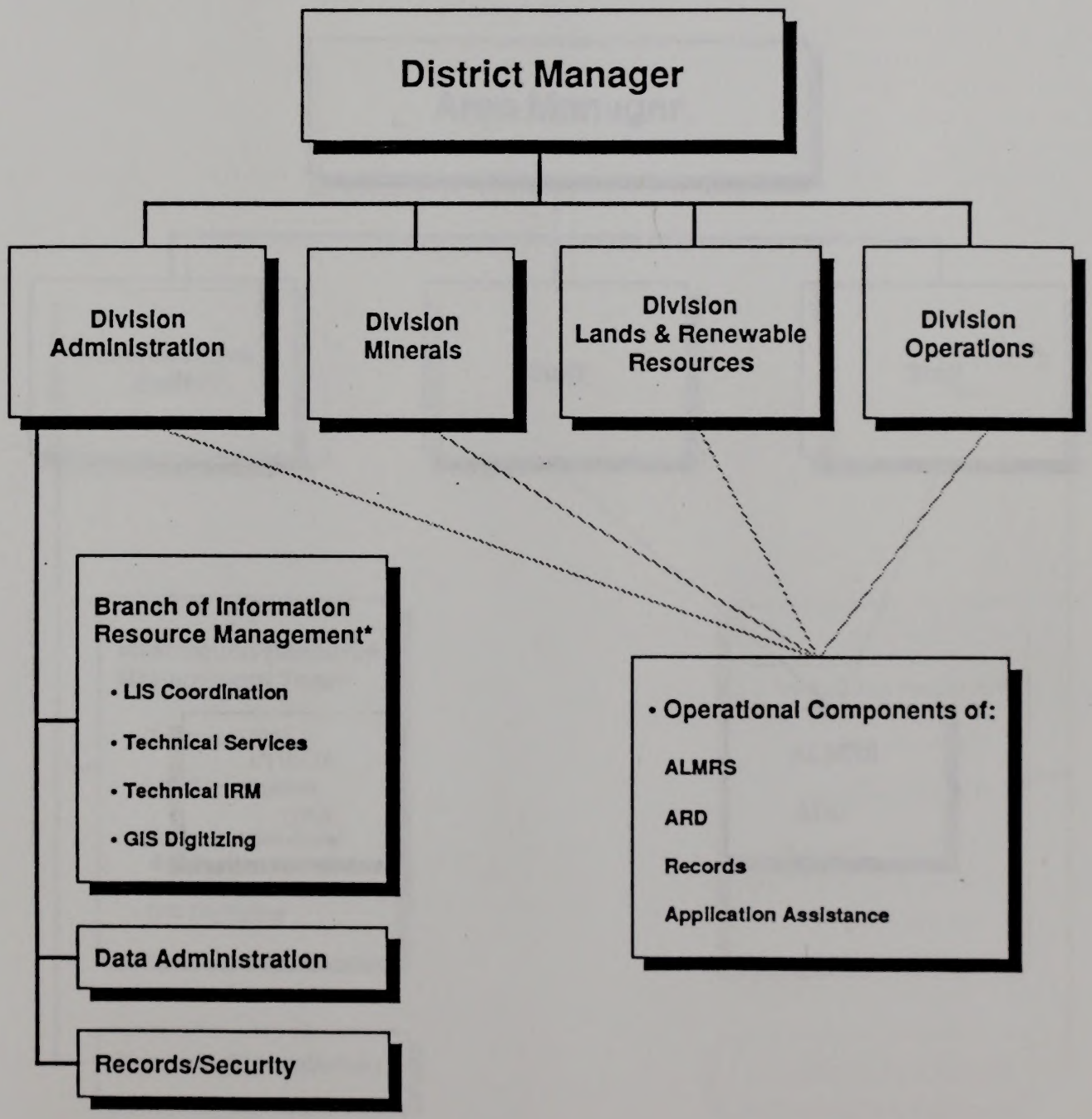


Illustration 1b

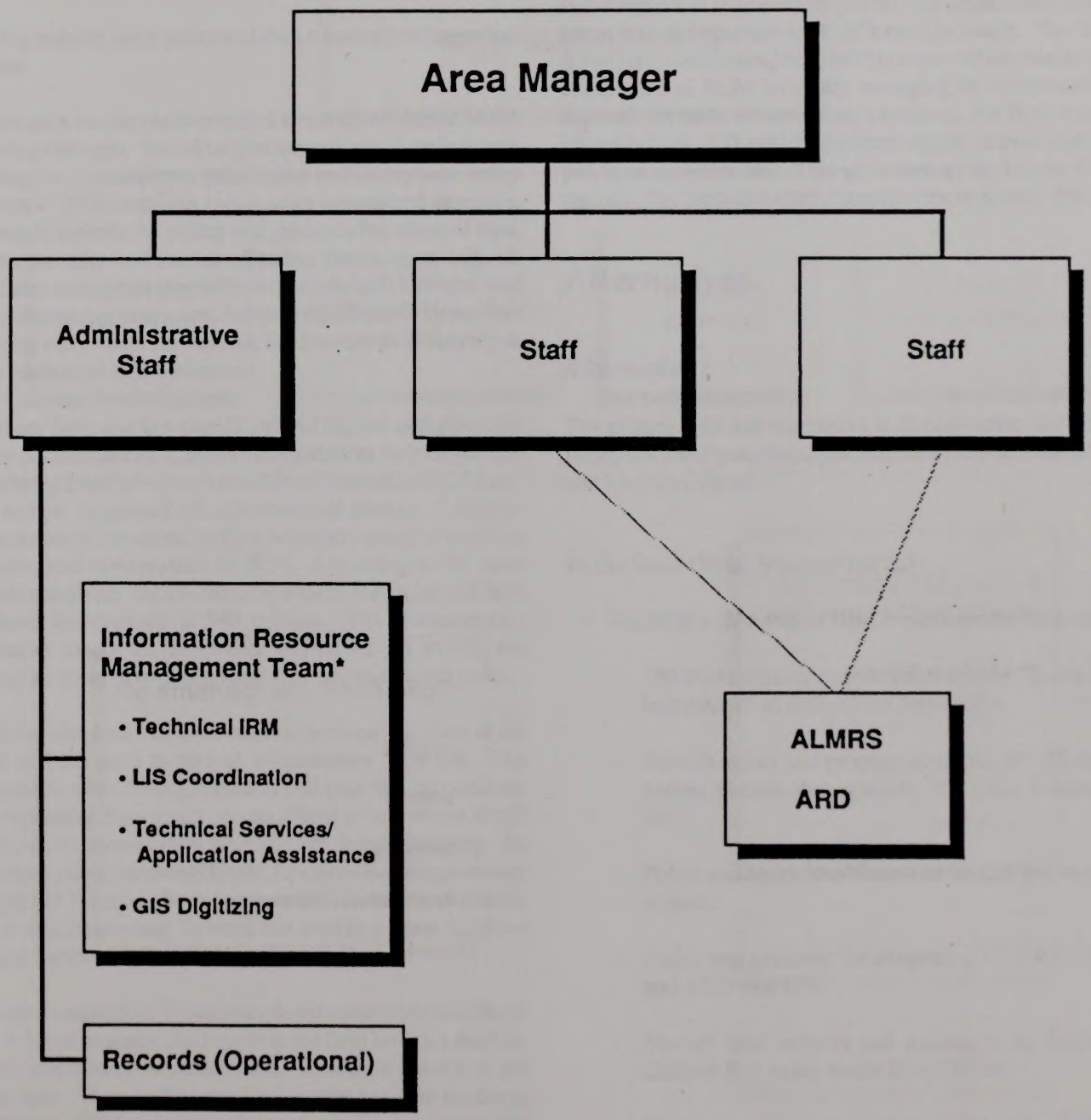
District Office Recommended Alternative



*May be a staff reporting to ADM for Administration in smaller Districts.

Illustration 1c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Acitivty/Responsibility Warrants

- Encourages broad involvement in IRM quality control at all levels of the organization.

Disadvantages:

- Separates LIS coordination (in Administration)from its operational aspects in other Divisions.
- Does not elevate IRM to the highest level possible in the Field office organizations.
- May require more personnel than a centralized organization.

The rationale for the recommended alternative is based on the following concepts. Based on past experience, there is a need to strengthen, consolidate, standardize and incorporate many of the new IRM functions into a more centralized structure. This would include the policy and guidance functions of data, records, security and the coordination functions of LIS. It would also strengthen the ability to provide both technical and applications support to users. It would significantly strengthen and make more visible the overall IRM functions as they relate to the traditional BLM mission.

The Team feels this is a significant and logical step given the current circumstances Current circumstances include the Bureau's budget and how much should be allocated for IRM functions and the magnitude of organizational change. A significant amount of the curret budget is already going toward the operation and maintenance of IRM. According to the most definitive analysis (IM 89-285), the total IRM cost for just IRM personnel Bureauwide is $40 million. The recommended alternative meets the functional objectives yet avoids the substantial costs of creating large new organizational units.

The Team also believes there needs to be a realistic view of the future and the need to take an evolutionary approach. The estimates of what the target system will look like, its performance capability, how much we can afford to buy, where it will be placed, implementation schedule, etc. keeps changing. As the target system becomes clearer, functions and structure may change; but for now, the recommended alternative is considered a significant step forward but avoids a giant lurch — perhaps backwards.

The current attitude of Bureau employees is another consideration. It is not so much that people at the field level are dead set against automation-modernization. Their motivation is to get things done. They get frustrated when they can't see the direct link between IRM and getting things done; they get upset when they perceive funds going toward something they either don't understand or don't want to understand. The point is there are strong persuasive attitudes which will be impacted by organizational changes, depending on the magnitude of change and how people perceive they will be impacted.
The recommended alternative will produce the desired functional results, make needed organizational shifts without major adverse impacts on the budget, is within the decentralized context of the existing structure, will not generate negative reactions and will help the field employees understand and accept how IRM relates to their getting things done.

Some argue that IRM needs high visibility organizationally because it is so important to BLM's outside image. The Team feels this is a misconception. IRM is a term which relates to the importance of BLM internally managing its information resources. As such, it is everyone's business, but IRM is not an image builder. LIS which produces visible outputs and services is an image builder. This is the concept the bureau should pursue. The recommended alternative incorporates this idea.

Alternatives

Alternative 1

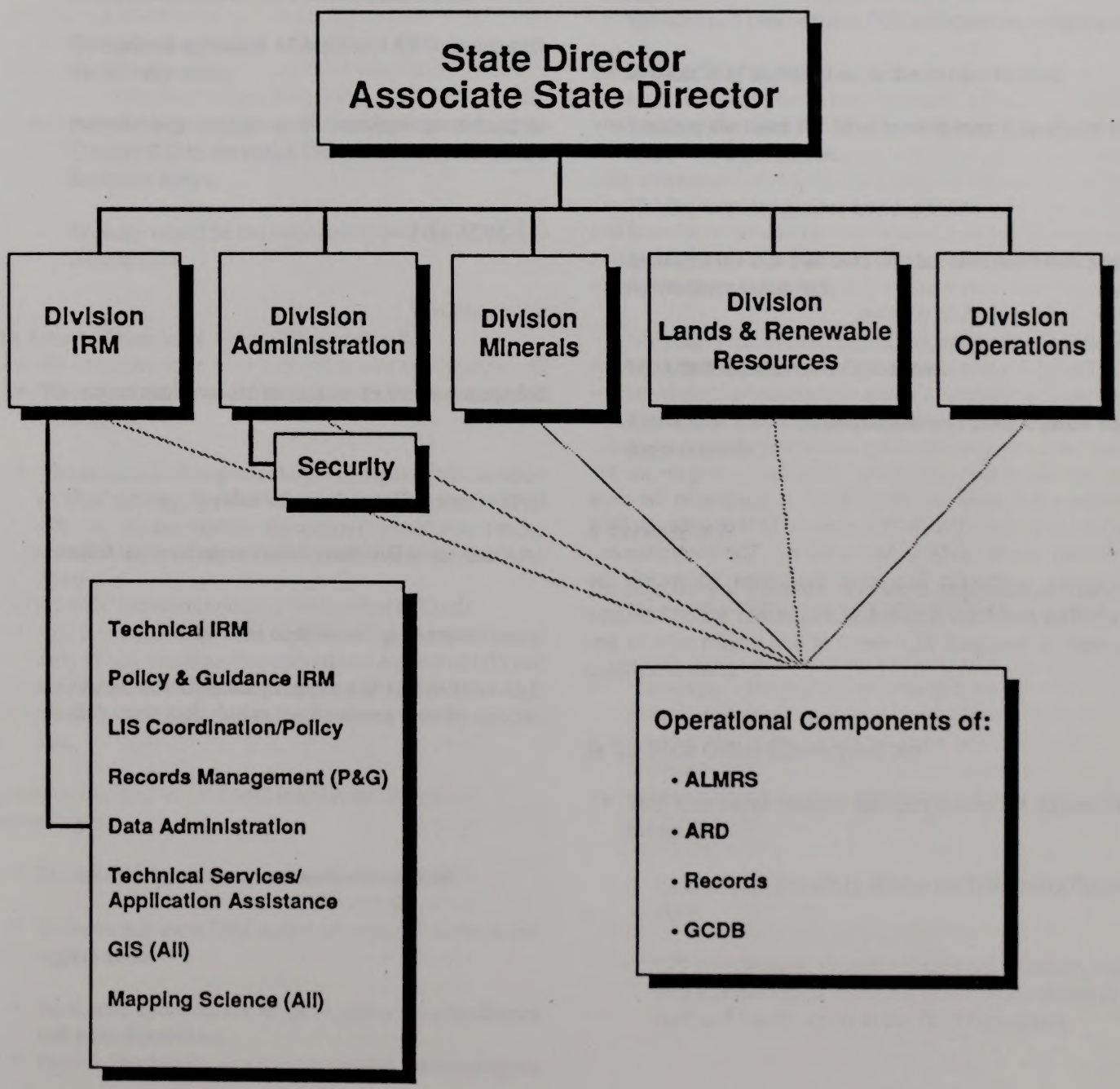
The objective of this alternative is to emphasize and elevate IRM policy and procedural guidance functions in State Offices and District Offices.

In the State Office (Illustration 2a)

- Establish a Division of IRM to perform the following:
  - The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II,A.
  - Provide policy and program guidance for LIS coordination, records management, and Data Administration.
  - Policy and operational functions for GIS and mapping science.
  - Policy and guidance for integrating ALMRS, GCDB, and ARD into LIS.
  - Provide user support and assistance as defined in Chapter II,G to the entire State Office.
  - Security would be the responsibility of the DSD Administration.

Illustration 2a

State Office Alternative 1



In the District Office (Illustration 2b)

- Establish a Division of IRM or staff reporting to the District Manager to perform the following:
  - The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II,A.
  - Provide policy and program guidance for LIS coordination, records management, and data administration.
  - Policy and operational functions for GIS as well as policy and guidance for ALMRS, and ARD.
  - Operational aspects of ALMRS and ARD remain with the primary users.
  - Provide user support and assistance as defined in Chapter II,G to the entire District Office and attached Resource Areas.
  - Security would be the responsibility of the ADM Administration.

In detached Resource Areas (Illustration 2c)

- The organization would be similar to the recommended alternative.
- The demand for computer skills will depend on the amount of IRM activity, number of employees, amount of HW/SW etc. As appropriate, person/staff would report to the resource area administrative staff leader or the Area Manager.
- The Resource Area IRM staff would perform collateral duty in LIS coordination, operational aspects of GIS and user assistance. Operational aspects of ALMRS and ARD would be accomplished in the Resource Area by Specialists.

Advantages:

- Elevates the importance and authority of IRM.
- Concentrates most IRM technical responsibilities in one organization.
- Facilitates coordination of IRM policy, standardization and related activities.
- Provides backup for user support or other functions within a single organization.
- Establishes LIS accountability in a single organization.
- Improves efficiency of scale and flexibility to IRM supervisors.
- IRM manager becomes a member of the Management Team.

Disadvantages:

- Elevates and concentrates IRM authority in a single unit.
- Isolates IRM technical expertise in one division.
- Reduces the need for IRM involvement throughout the rest of the organization.
- Hinders user acceptance and support.
- Increases the fear that IRM will become more than a tool for resource managers.
- Potentially forces other organizational/grade adjustments, i.e. Administration and Operations.
- Establishes a new organizational unit in each office with support needs.

Alternative 2

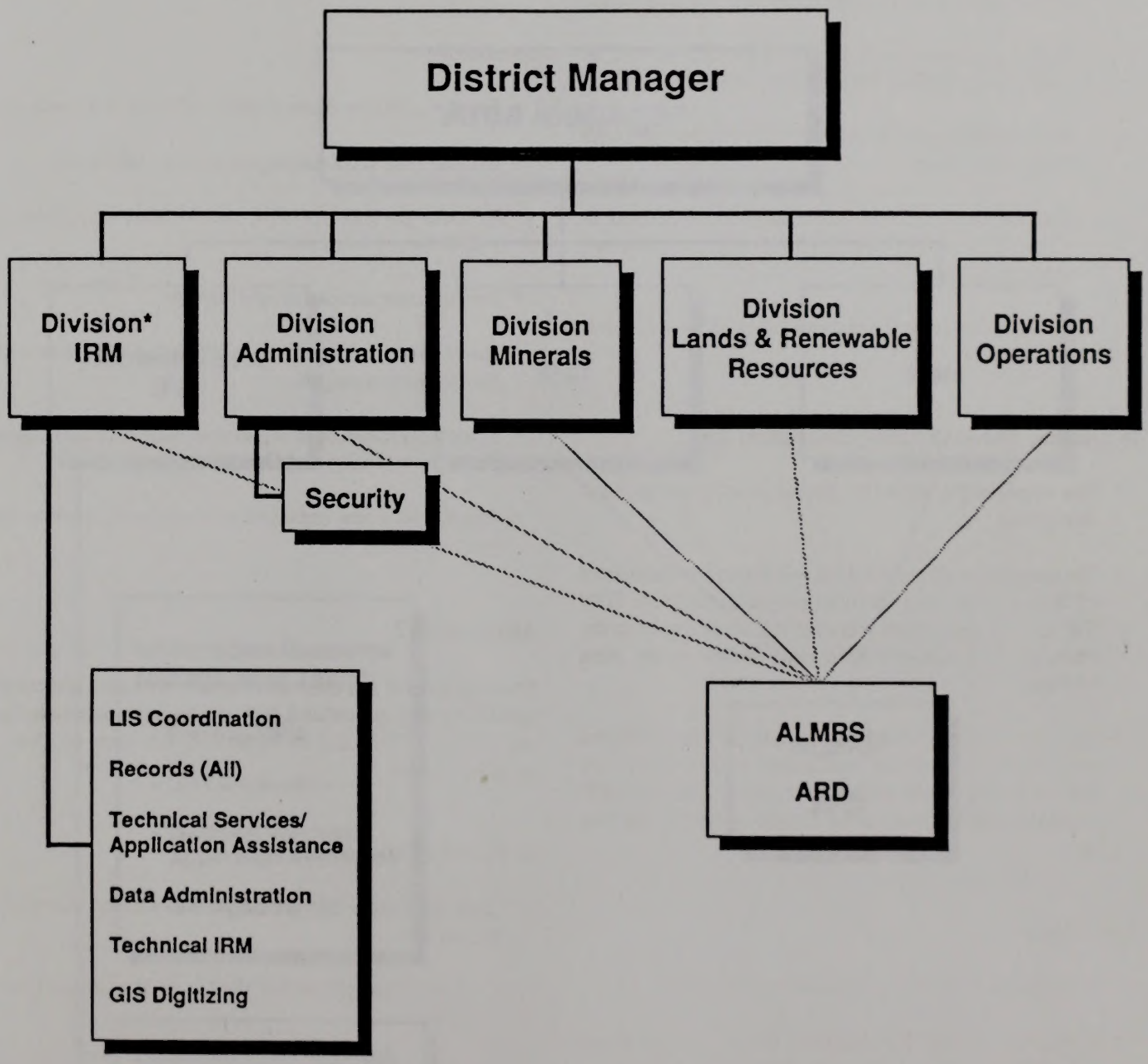
The objectives of this alternative are to emphasize and coordinate IRM policy, procedural, and operational functions in State and District offices and to locate LIS functions as close as possible to users.

In the State Office (Illustration 3a)

- This alternative mirrors the Recommended Alternative except for:
  - Establishes a Branch of IRM in the Division of Operations.
  - LIS coordination, records management, security, and data administration functions would be combined in a staff and would report to the DSD Operations.

Illustration 2b

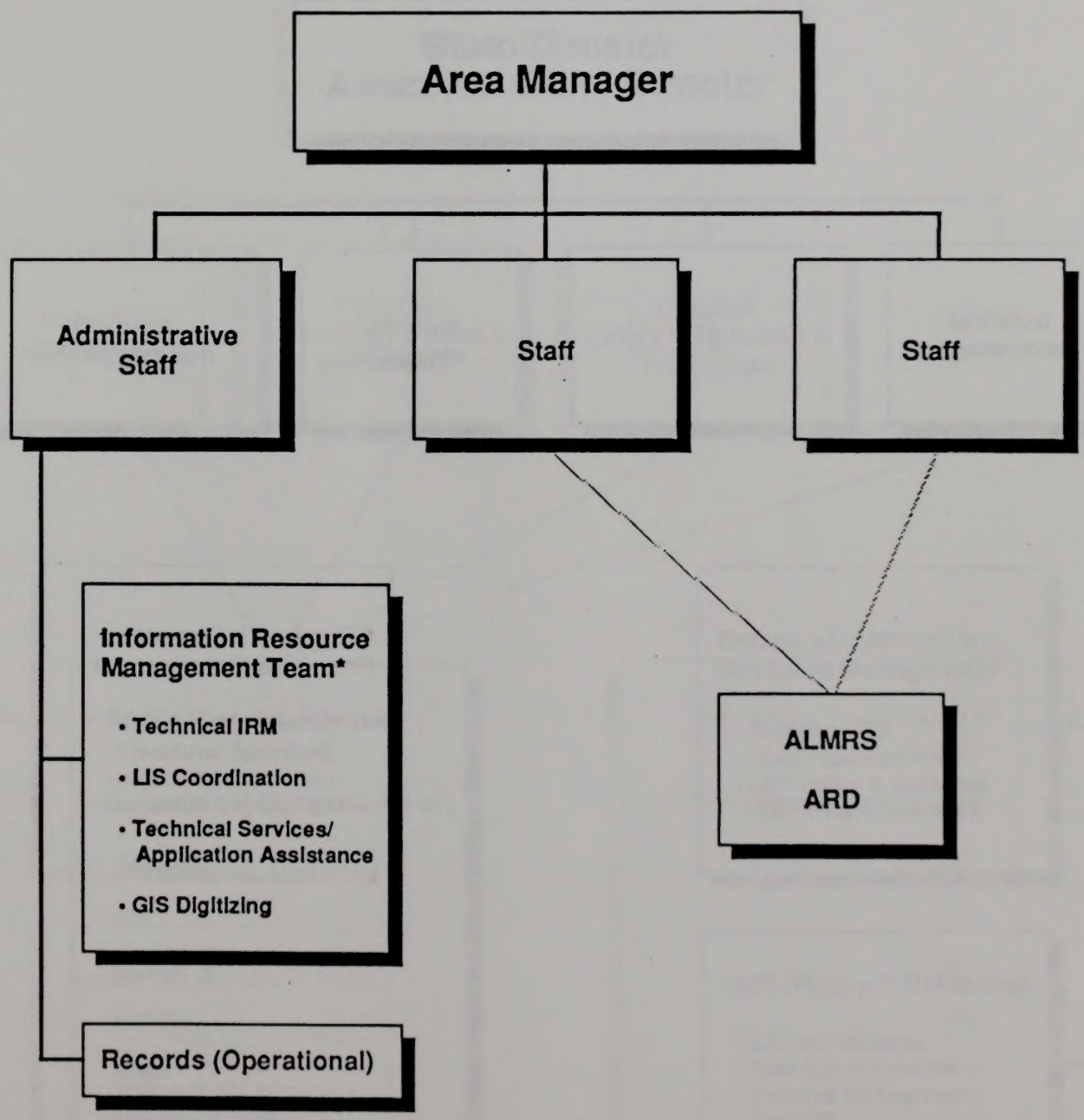
District Office Alternative 1



*or Staff to Get Automation Started

Illustration 2c

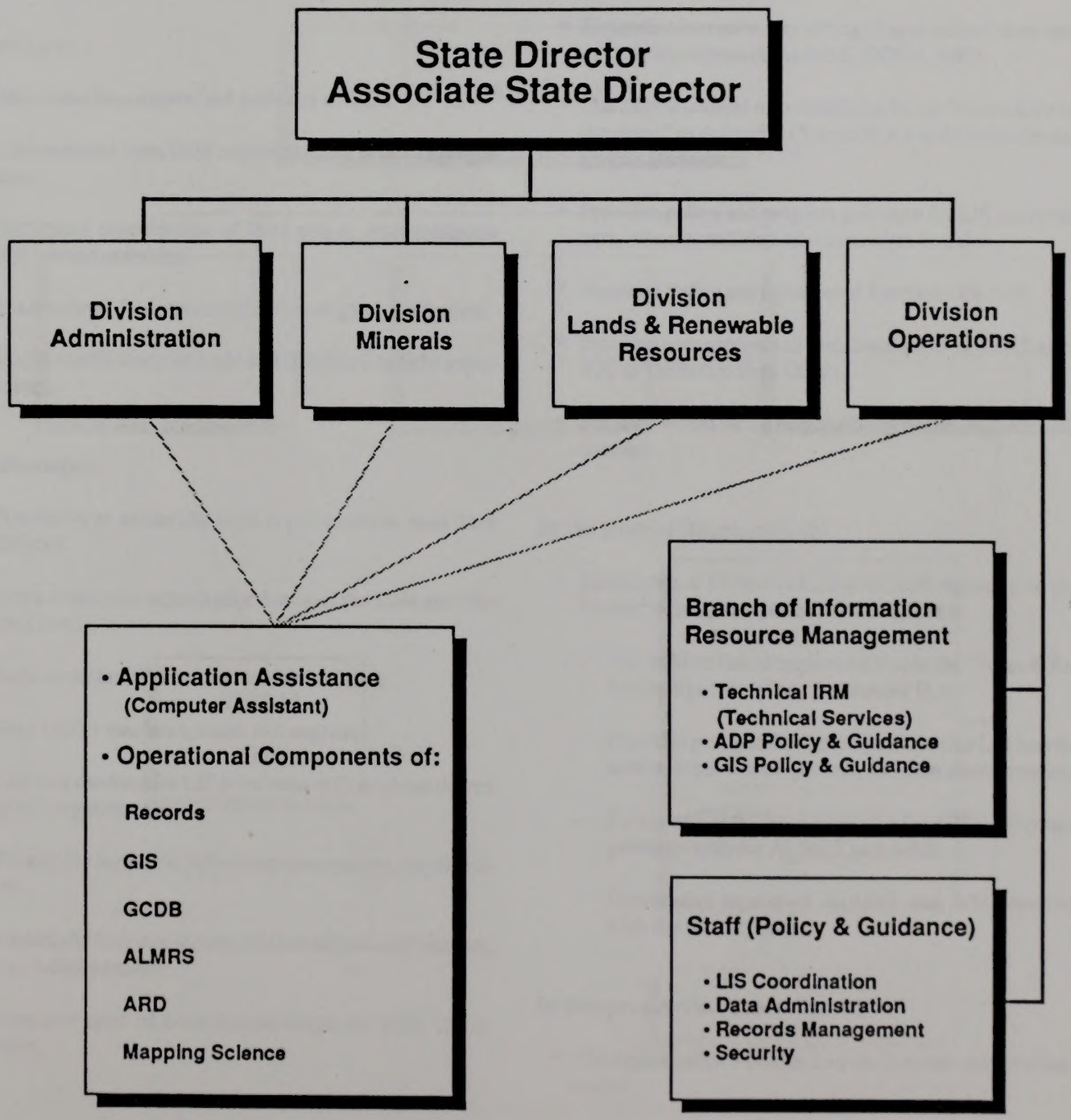
Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Acitivty/Responsibility Warrants

Illustration 3a

State Office Alternative 2



In the District Office (Illustration 3b)

- The organization would be the same as the recommended Alternative.

Within the Resource Area (Illustration 3c)

- The organization would be the same as the Recommended Alternative.

Advantages:

- Maintains importance and authority of IRM.
- Concentrates most IRM responsibilities in one organization.
- Facilitates coordination of IRM policy, standardization and related activities.
- Establishes LIS accountability in a single organization.
- Improve efficiency of scale and flexibility to IRM supervisors.

Disadvantages:

- Results in an extremely large organization in most State Offices.
- Not a consistent organization between the State and District levels.
- Isolates technical expertise in one Division.
- May hinder user acceptance and support.
- Reduces the need for LIS involvement throughout the rest of the organization.
- Priority for support to Administrative systems may diminish.
- Potentially forces other organizational/grade adjustments, e.g. Administration.
- Increases span of control/supervision for DSD Operations.

Alternative 3

The objective of this alternative is to combine policy, guidance, and operational aspects with technical aspects of IRM & LIS in a high profile organization.

In the State Office (Illustration 4a)

- Establishes an *operational* Division of IRM.
- Expands Alternative 1 by adding all *operational* aspects of records management, ALMRS, GCDB, ARD.
- The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II,A would be performed by this Division.
- Provides policy and program guidance for LIS coordination, records, and data administration functions.
- Provides policy and operational functions for GIS.
- Provides user support and assistance as defined in Chapter II,G to the entire State Office.
- Security would be the responsibility of the DSD Administration.

In the District (Illustration 4b)

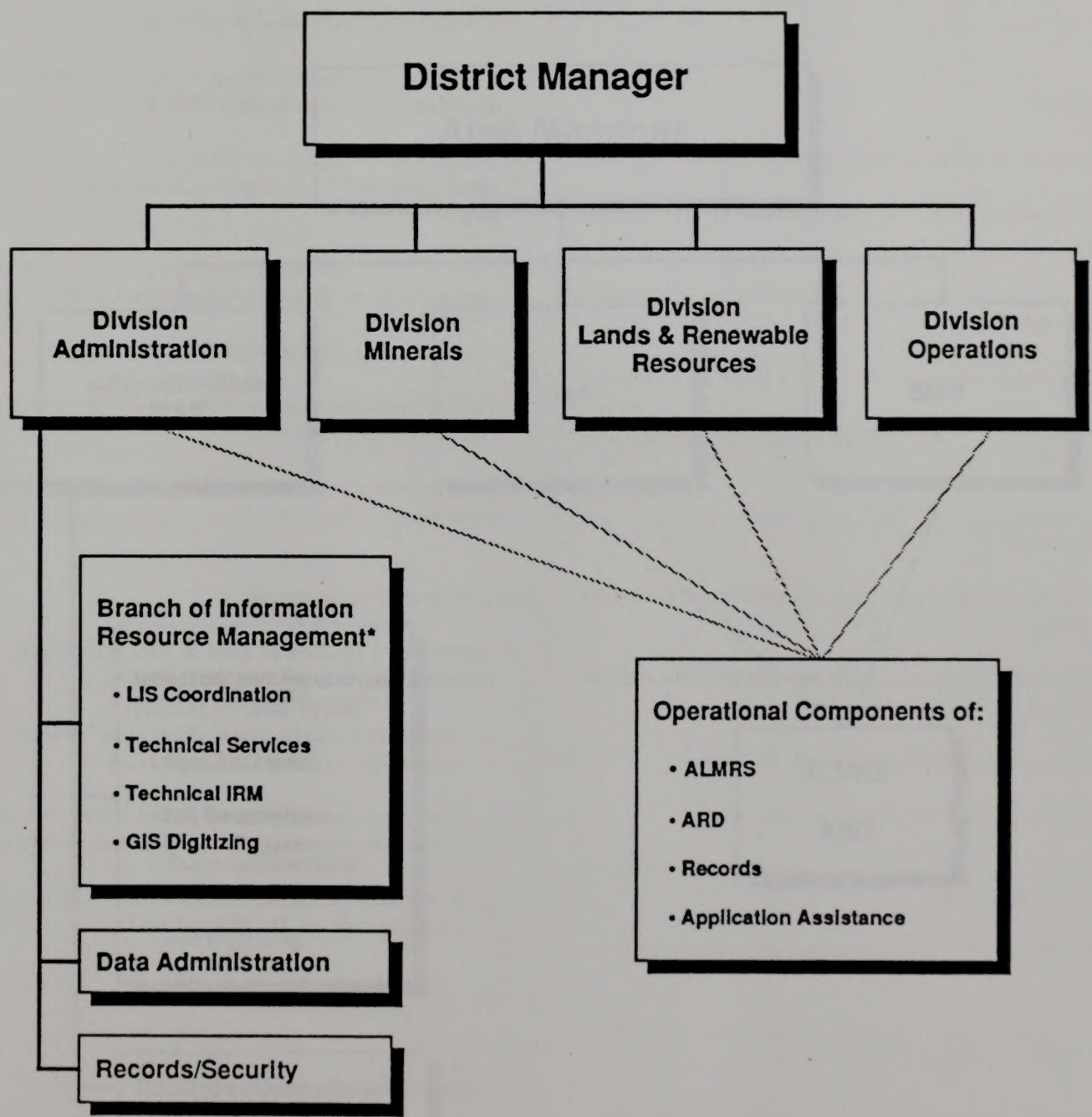
- Establishes a Division of IRM or staff reporting to the District Manager to perform the following:
  - The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II,A.
  - Provides policy and program guidance for LIS coordination, records management, and data administration.
  - Policy and operational functions for GIS. Policy and guidance only for ALMRS and ARD.
  - Operational aspects of ALMRS and ARD remains with the primary users.

In Resource Areas (Illustration 4c)

- The organization would mirror the Recommended Alternative.

Illustration 3b

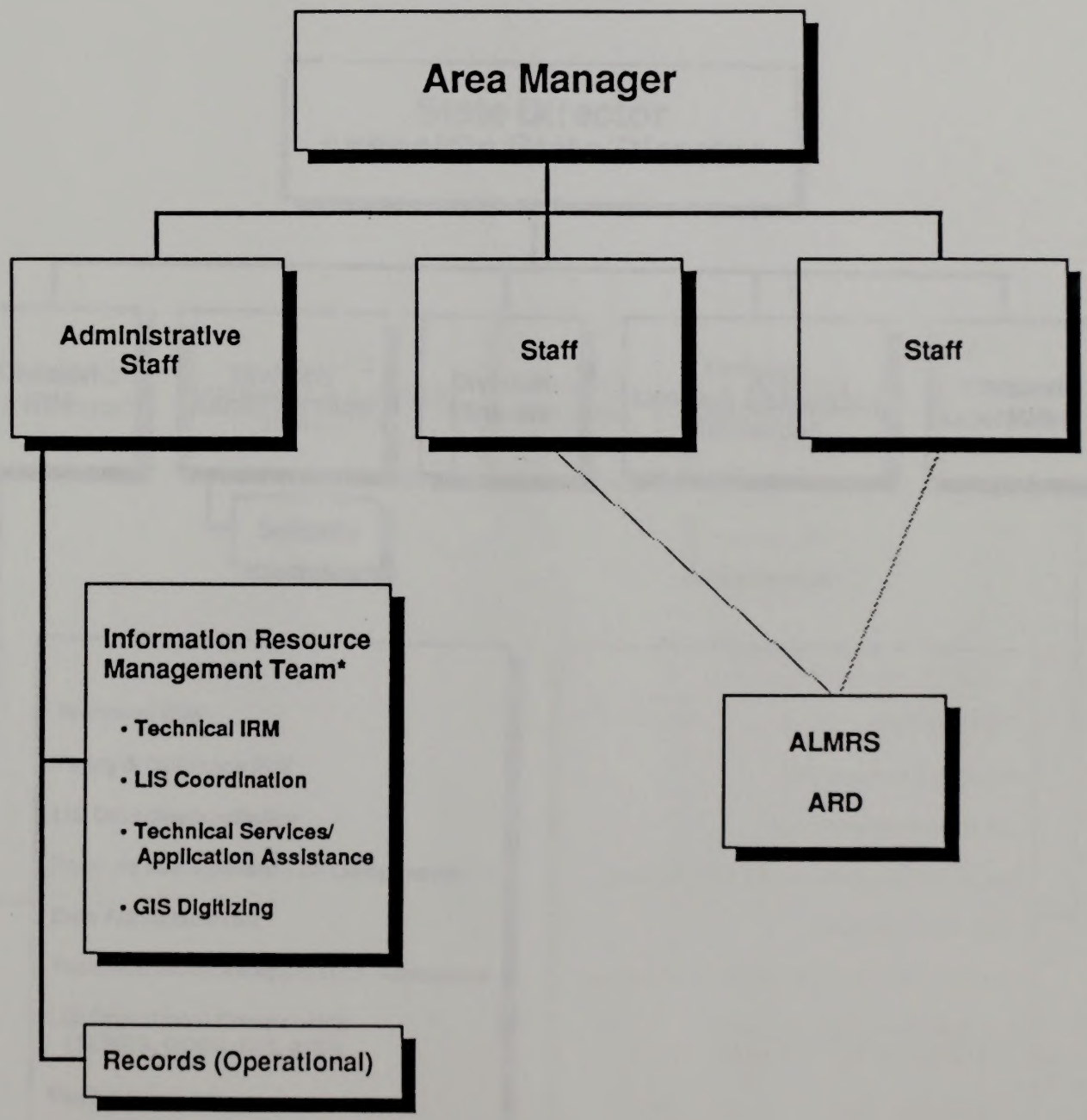
District Office Recommended Alternative



*May be a staff reporting to ADM for Administration in smaller Districts.

Illustration 3c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Activty/Responsibility Warrants

Illustration 4a

State Office Alternative 3

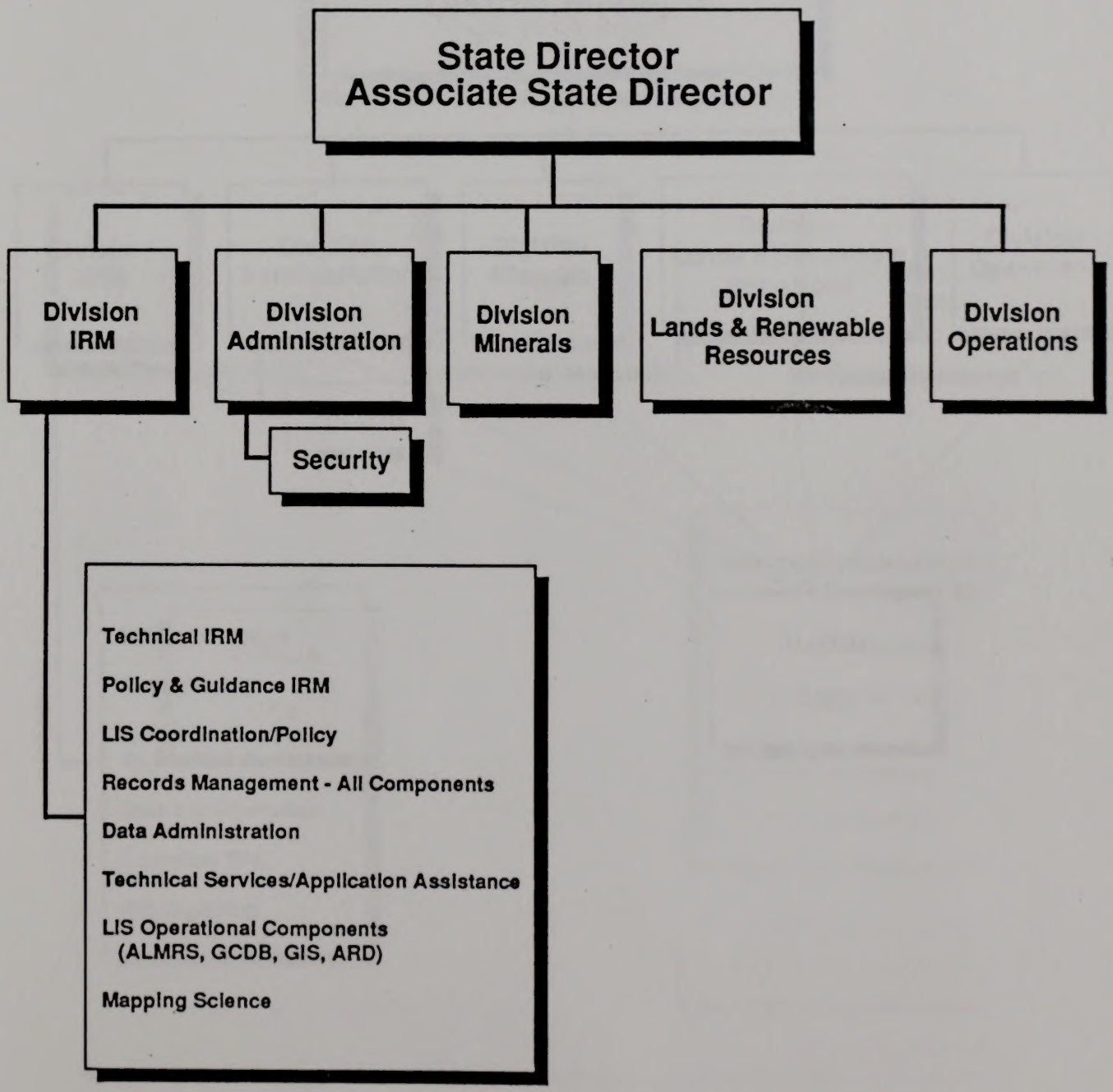
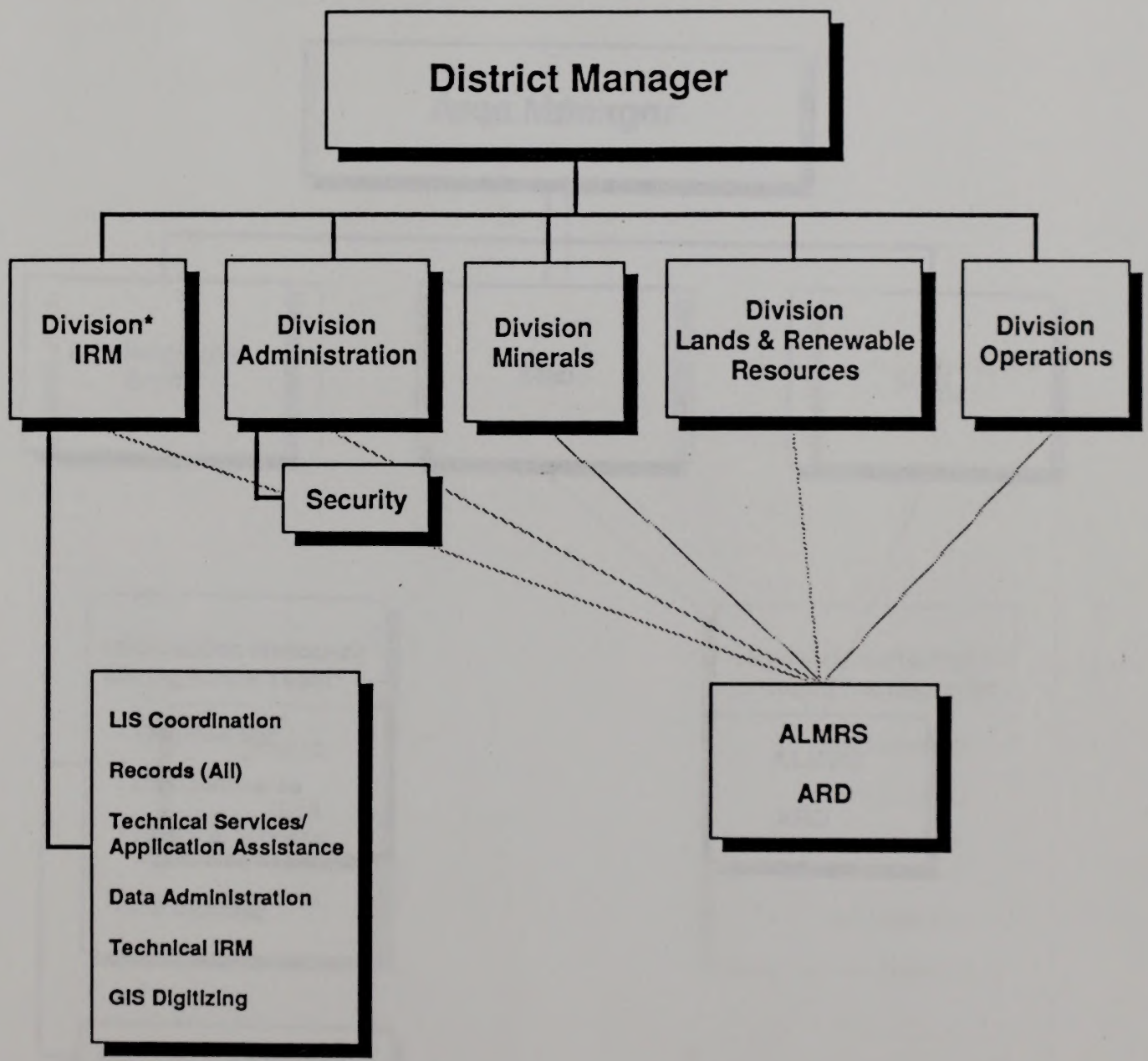


Illustration 4b

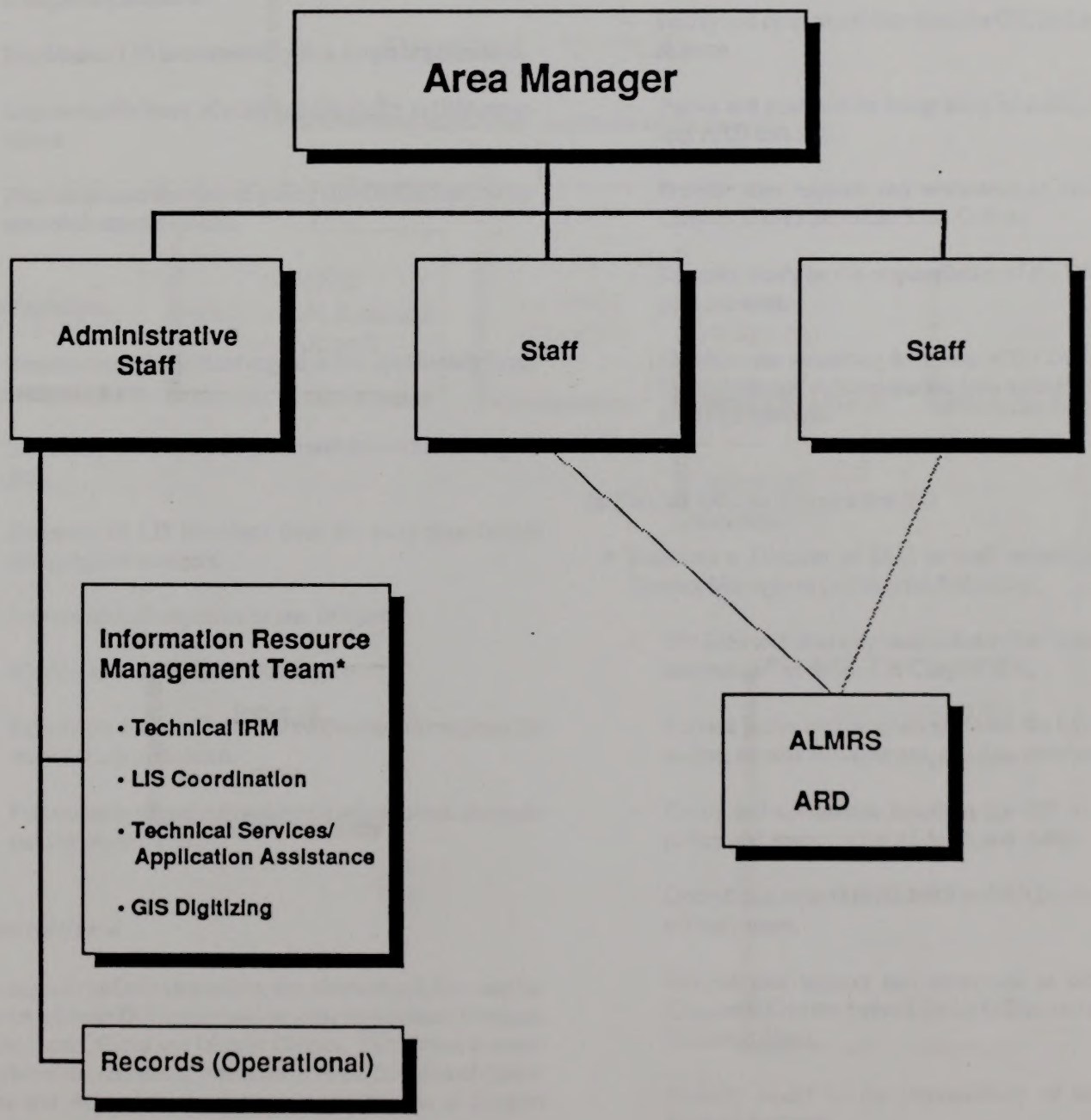
District Office Alternative 3



*or Staff to Get Automation Started

Illustration 4c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Acitivty/Responsibility Warrants

Advantages:

- Elevates the importance and authority of IRM.
- Concentrates all IRM responsibilities in one organization.
- Facilitates coordination of IRM policy, standardization and related activities.
- Provides backup for user support or other functions within a single organization.
- Establishes LIS accountability in a single organization.
- Improves efficiency of scale and flexibility to IRM supervisors.
- Facilitates coordination of policy standardization and operational aspects of LIS.

Disadvantages:

- Greatly expands the IRM organization, specifically in operational areas.
- Is contrary to Bureau delegation and decentralization policies.
- Removes all LIS functions from the users organization and program mangers.
- Isolates all LIS expertise in one Division.
- Hinders user acceptance and support.
- Eliminates the need for IRM involvement throughout the rest of the organization.
- Forces other organizational/grade adjustments, throughout the organization.

Alternative 4

The objective of this alternative, like alternative 1, is to emphasize and elevate IRM policy and procedural guidance functions in the State Offices and District Offices. This alternative also combines the remaining functions from the Division of Operations and Administration into a single Division of Support Services.

In the State Office (Illustration 5a)

- Establishes a Division of IRM to perform the following:
  - The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II.A.
  - Provide policy and program guidance for LIS coordination, records management, and Data Administration.
  - Policy and operational functions for GIS and mapping science.
  - Policy and guidance for integrating ALMRS, GCDB, and ARD into LIS.
  - Provide user support and assistance as defined in Chapter II.G to the entire State Office.
  - Security would be the responsibility of the DSD Support Services.
  - Combine the remaining functions of the Divisions of Operations and Administration into a single Support Services Division.

In District Offices (Illustration 5b)

- Establish a Division of IRM or staff reporting to the District Manager to perform the following:
  - The IRM technical responsibilities in the "Roles & Relationships" as defined in Chapter II.A.
  - Provide policy and program guidance for LIS coordination, records management, and data administration.
  - Policy and operational functions for GIS as well as policy and guidance for ALMRS and ARD.
  - Operational aspects of ALMRS and ARD remain with primary users.
  - Provide user support and assistance as defined in Chapter II,G to the entire District Office and attached Resource Areas.
  - Security would be the responsibility of the ADM Support Services.
  - Combine the remaining functions of the Division of

Illustration 5a

State Office Alternative 4

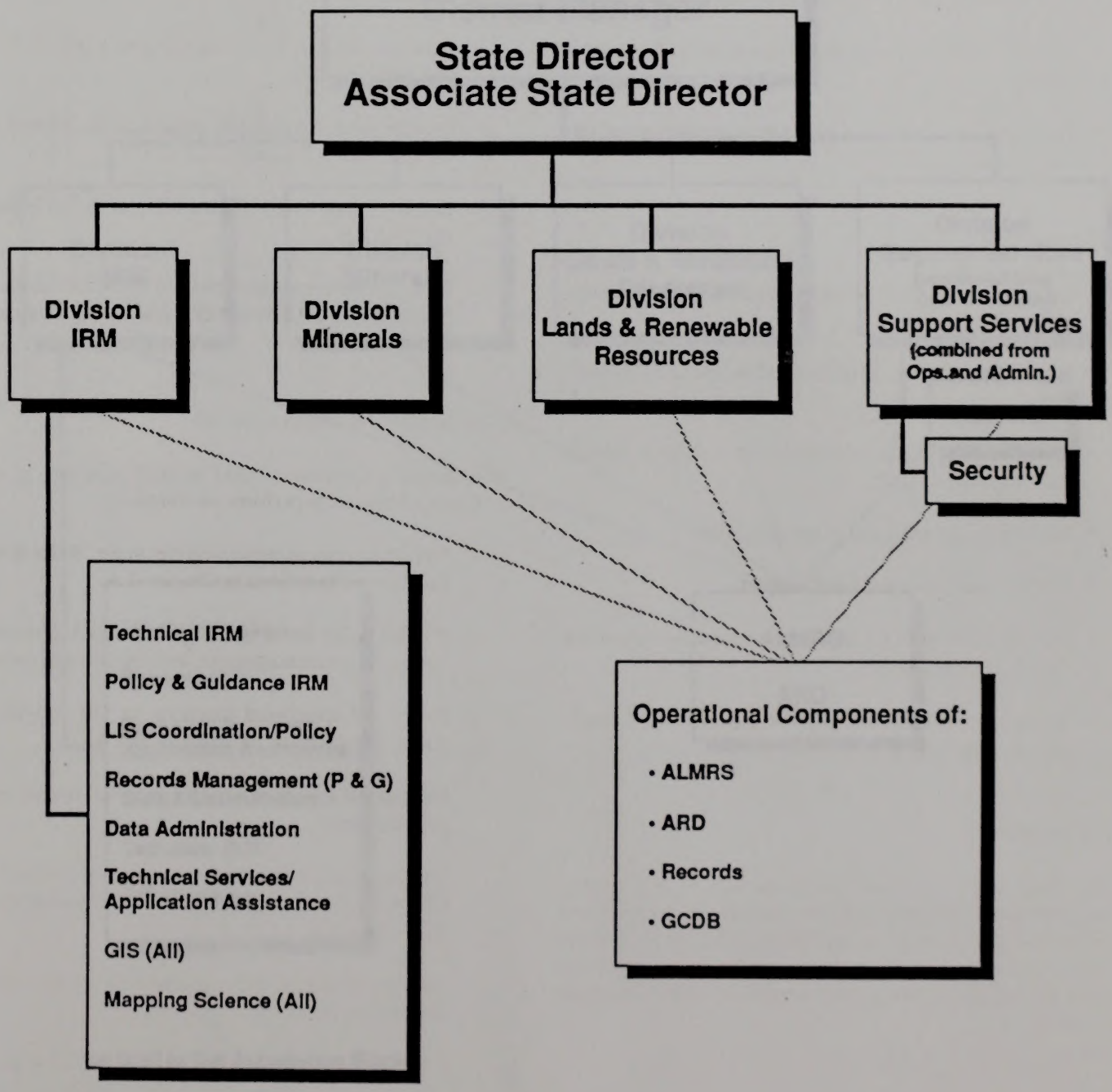
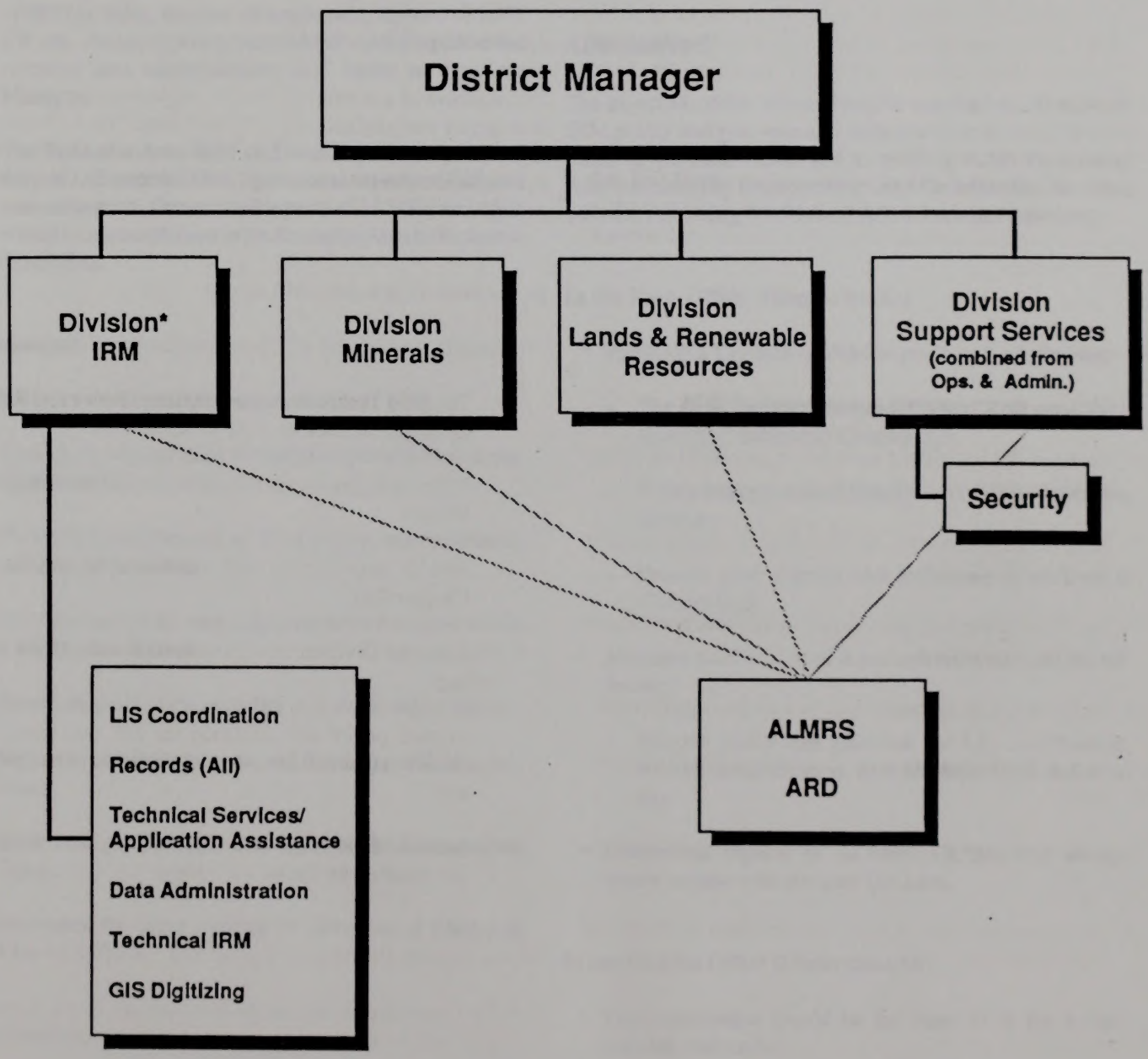


Illustration 5b

District Office Alternative 4



*or Staff to Get Automation Started

Operations and Administration into a single Division of Support Services.

In Detached Resource Area Offices (Illustration 5c)

- The organization would be similar to the recommended alternative.
- The demand for computer skills will depend on the amount of IRM activity, number of employees, amount of HW/SW etc. As appropriate, person/staff would report to the resource area administrative staff leader or the Area Manager.
- The Resource Area IRM staff would perform collateral duty in LIS coordination, operational aspects of GIS and user assistance. Operational aspects of ALMRS and ARD would be accomplished in the Resource Area by Resource Specialists.

Advantages:

- Elevates the importance and authority of IRM.
- Concentrates most IRM technical responsibilities in one organization.
- Facilitates coordination of IRM policy, standardization and related activities.
- Provides backup for user support or other functions within a single organization.
- Establishes LIS accountability in a single organization.
- Improves efficiency of scale and flexibility to IRM supervisors.
- IRM manager becomes a member of the Management Team.
- Maintains the same number of Divisions at State and District Offices.

Disadvantages:

- Elevates and concentrates IRM authority in a single unit.
- Reduces the need for LIS involvement throughout the rest of the organization.
- Hinders user acceptance and support.
- Increases the fear that IRM will become more than a tool for resource managers.
- Creates maximum disruption in Divisions of Operations and Administration through reorganization.

Alternative 5

The objective of this alternative is to emphasize and evaluate IRM policy and guidance and technical functions to Division status in the State Office and to retain a viable Division of Administration by incorporating IRM Coordination functions with the remaining Division of Administration functions.

In the State Office (Illustration 6a)

- Establish a Division of IRM to perform the following:
  - The IRM Technical responsibilities "Roles and Relationships" defined in Chapter II,A.
  - Policy and operational functions for GIS and mapping science.
  - Provide user support and assistance as defined in Chapter II,G.
- Maintain the Division of Administration and add the following:
  - Provide policy and guidance for LIS coordination, records administration, data administration and security.
- Operational aspects of ALMRS, GCDB, and records would remain with the user Division.

In the District Office (Illustration 6b)

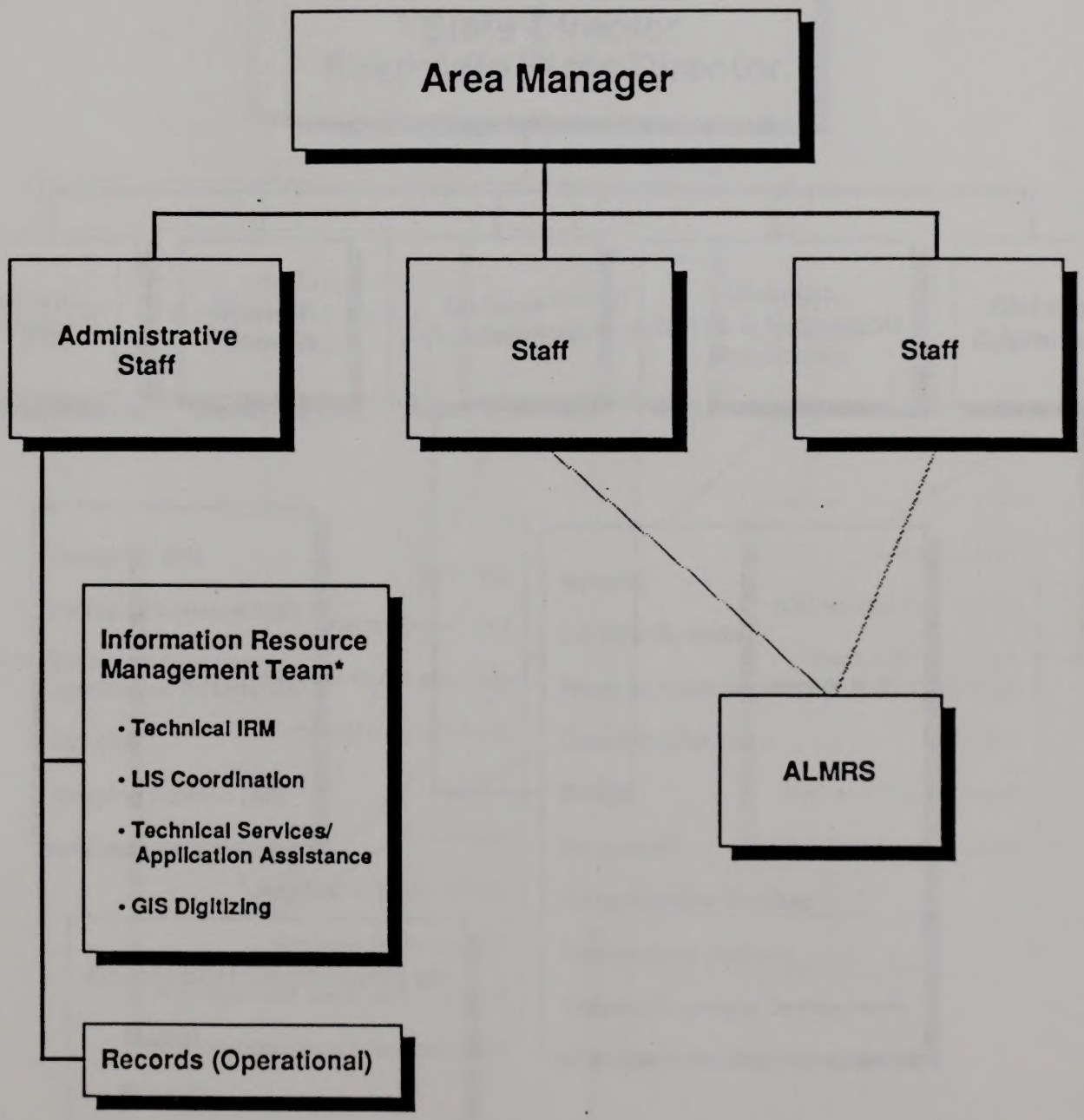
- The organization would be the same as in the recommended alternative.

In the Resource Area (Illustration 6c)

- The organization would be the same as in the recommended alternative.

Illustration 5c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Acitivty/Responsibility Warrants

Illustration 6a

State Office Alternative 5

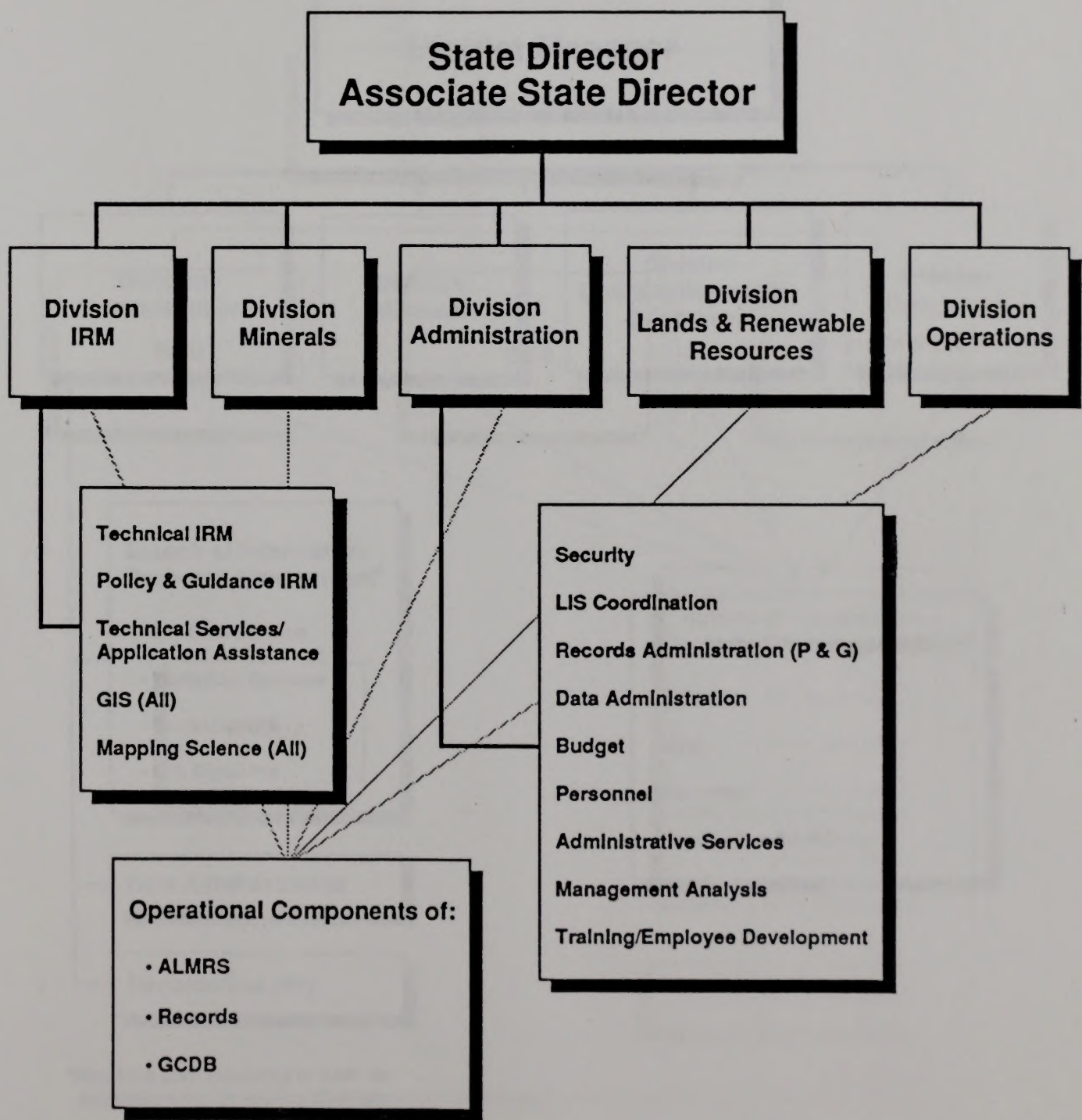
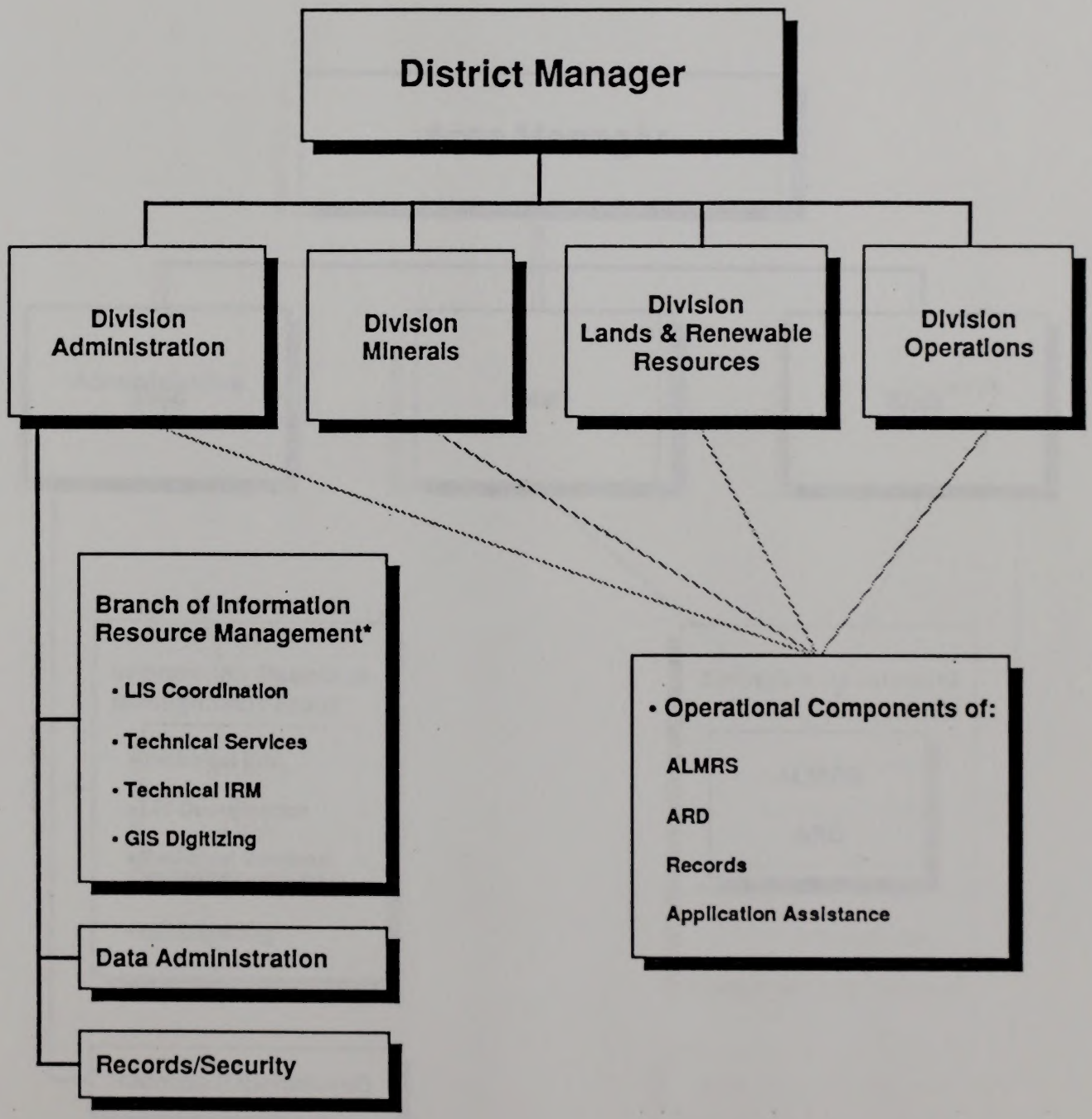


Illustration 6b

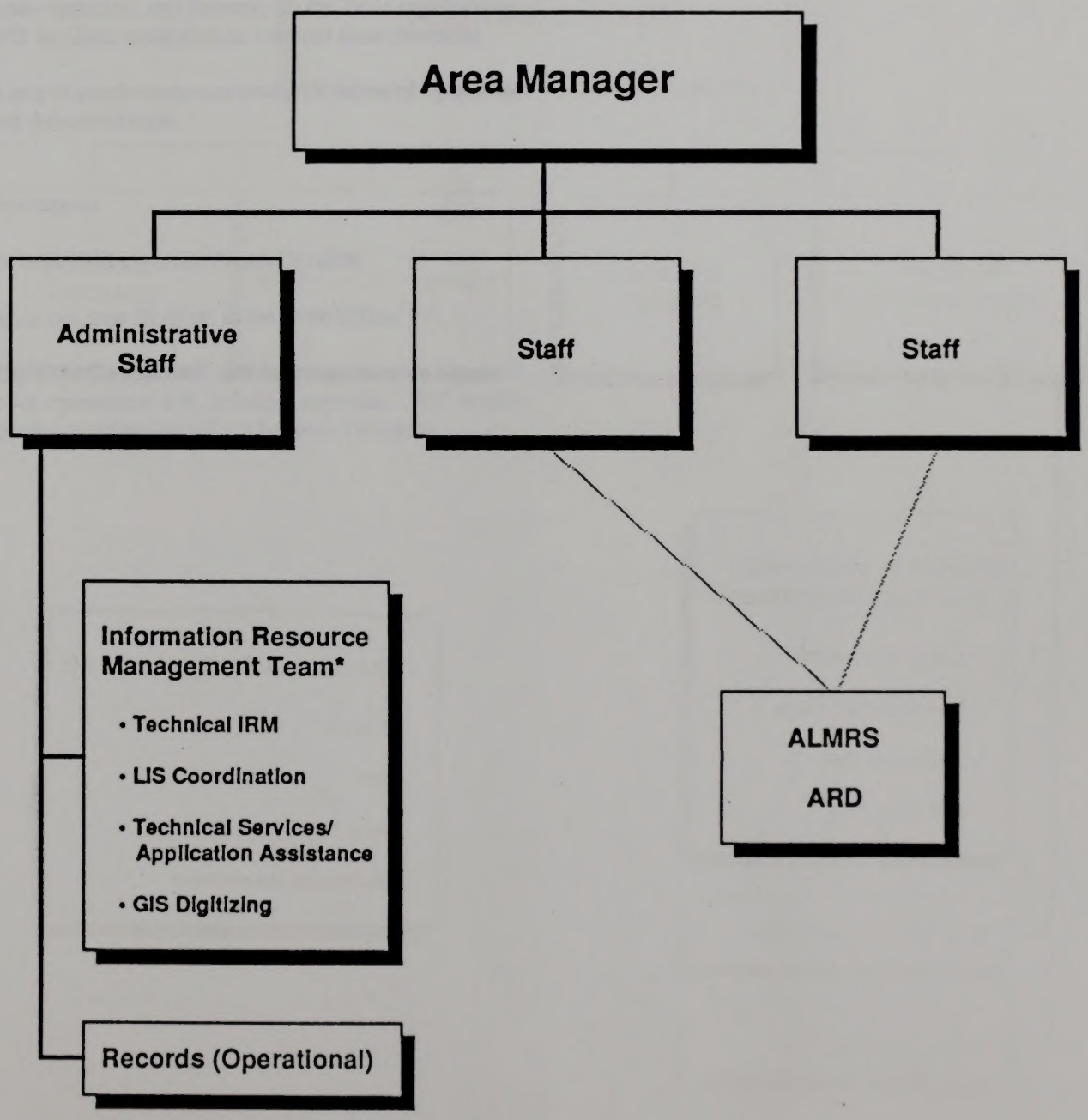
District Office Recommended Alternative



*May be a staff reporting to ADM for Administration in smaller Districts.

Illustration 6c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Acitivty/Responsibility Warrants

Advantages:

- Elevates the importance and authority of IRM.
- Concentrates most ADP technical responsibilities in one organization.
- Provides backup for user support within a single organization.
- Places LIS Coordinator, Data Administration, Records Administration, and Security in the same organization. Will facilitate coordination between these functions.
- Is less disruptive than combining Divisions of Operations and Administration.

Disadvantages:

- Isolates IRM expertise in one Division.
- Adds one new Division to the State Office.
- Key IRM Coordinators and Administrators are separated from operational and technical expertise. Will require greater coordination efforts between Divisions.

Appendix A
Automation-Modernization Function/Structure Decision Document

Functional Issues

Program Leaders/Management of Automation-Modernization (Issue II A, Page 3)

Issue

There are diverse interpretations about the role of program leaders and the function of managing automation-modernization in specific program areas. Some assume management, some do not, resulting in lack of and fragmented guidance on automation in program areas.

Alternatives

a. Delegate the function of developing and implementing policies and procedures for program automation to technical ADP positions/organizations.

b. Delegate the function of developing and implementing policies and procedures for program automation to program leader positions and organizations at State, District, and Resource Area levels.

Recommendations

Alternative b. with the following functions related to automation:

- Develop automation/modernization policies and procedures related to specific programs (handbooks, etc.).
- Determine automation program needs at appropriate organization levels (functional requirements).
- Develop, implement, and track plans and budgets for automation within specific programs.
- Manage automated program data:
  - Determine automated program data needs.
  - Determine automated data standards (within data administration guidelines).
  - Provide for data collection and entry (spatial and keyboard).
  - Prepare and administer data related contracts.
  - Develop and administer quality control standards.
- Provide training for program specific applications.
- Provide user support for program specific applications.

Decision

Approved as recommended _____ _____
Signature Date

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Administration of Data (Issue II C, Page 9)

Issue

Apart from the impact of managing data within specific programs, the Bureau does not have in place agreed upon functions for the overall administration of data. Without comprehensive guidance and disciplined control of data, hardware and software will be of very limited value.

Alternatives

a. Accomplish management within each program (Issue A) and accomplish comprehensive data administration on an ad-hoc basis.

b. Create new data administration functions to accomplish those comprehensive functions on a continuous basis at all field office levels.

Recommendations

Alternative b with the following functions:

- Develop policies and procedures for data administration.
- Identify data ownership (corporate, program, external, etc.)
- Oversee the development of standards, attributes, codes, etc.
- Identify and implement guidance for data exchange, and cost recovery.
- Develop and implement guidelines for data security and access.
- Develop and implement guidelines for data modeling.
- Develop and implement guidelines for the administration of data element dictionaries.
- Provide quality control oversight for data administration.

Positions:

- There should be a full-time Data Administrator in each State Office.
- There should be a full-time or a collateral Data Administrator with records administration responsibilities at each District Office.
- There should be a collateral Data Administrator with records administration at each Resource Area Office.

Decision

Approved as recommended _____ _____
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Administration-Management of Automated Records (Issue II D, Page 11)

Issue

The Bureau currently has no functional description for the work required to administer the automation of records. This new function involving policies and procedures for the creation, storage, retrieval, ownership, and access to legal, public, sensitive, and working records etc. goes beyond the tasks of current Records Managers. This situation parallels in many respects that of data administration.

Alternatives

a. Do not create an automated records administration function. Wait until there is more definitive Government-wide guidance on automation of records then decide on function in BLM.

b. Create an automated records administration function. BLM take the lead for development of policies and procedures for the automation of records which BLM controls.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for records administration.
- Oversee the development of standards (ownership, legal, public, sensitive, and other types of records).
- Develop and implement guidelines for records security, access, exchange and cost recovery.
- Provide quality control oversight for Records Administration.
- Provide guidance for Records Administration training.

Positions:

- There should be a full-time Records Administrator in each State Office.
- There should be a collateral Records Administrator with data administration responsibilities in each District Office.
- There should be a full-time or collateral records administrator with data administration responsibilities in each Resource Area as workload dictates.

Decisions

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Role/Function of "Coordinators" (ALMRS, GCDB, ARD, GIS) (Issue II E, Page 14)

Issue

The role of most "coordinators" has evolved beyond performing information transfer and coordination. The current functions involve operation and program management type roles. The term "coordinator" is not well defined and the functions and structural placement of "coordinators" is widely diverse across the Bureau causing communication and delegation problems.

Alternatives

a. Maintain "coordinators" as ad hoc, diversely defined positions performing current roles.

b. Redefine "coordinator" positions as performing "true" coordination roles.

c. Recognize the evolved operational functions of coordinators. Clearly define their current roles and institutionalize them into existing organizational units.

Recommendation

Alternative c as follows:

a. Delete GCDB coordinator title, include functions and retitle positions in S.O. Division of Operations (Cadastral Survey).

b. Delete ALMRS Coordinator title, include functions and retitle positions in appropriate operational unit.

c. Delete GIS Coordinator title, include the technical hardware/software aspects in Division of Administration. Include the working knowledge of GIS applications in the program areas (program leaders).

d. Delete ARD Coordinator title, include the functions for automating resource data in the role of program leaders and specialists.

Decision

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LIS Coordination - Developing and Managing the Land Information System (Issue II F, Page 16)

Issue

By definition LIS is a system. It may also develop into an institutionalized BLM program (the planning system/program is a parallel), with significant meaning and visibility. Developing and managing LIS is a function needing clarification and standardization. Currently the LIS Coordination functions are loosely and diversely defined.

Alternatives

a. Consider LIS Coordination as a short-lived need and provide a sunset.

b. Consider LIS Coordination a long-range system/program need, and institutionalize the coordination and program management function.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for integrating GCDB, ARD, and ALMRS into a true Land Information System.
- Build and manage LIS as a Bureau program, coordinate the development of LIS plans, budgets, and evaluations.
- Coordinate educational outreach and inreach efforts.
- Coordinate user support for LIS applications.
- Coordinate and provide for training in LIS and its applications as a system.

Decision

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Signature Date

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Integrating and Managing Mapping Sciences (Issue II K, Page 24)

Issue

Currently the functions of remote sensing, aerial photography/photogrammetry, cartography, plat drafting, map preparation, and graphics are distributed across a wide variety of organizations. Coordination has been weak and some functions are not adequately staffed. Automation technology provides an opportunity for logically combining these functions in a scientific context as other mapping agencies have done.

Alternatives

a. Provide flexibility by keeping components separate.
b. Provide continuity by standardizing functions under mapping science umbrella.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for a mapping science program integrating remote sensing, aerial photography/photogrammetry, cartography, plat drafting, and map preparation.
- Provide Mapping Science support for LIS e.g., Resources Base Data maps and GCDB maps and plats.
- Provide Mapping Science support for resource management programs.
- Manage the Mapping Science function.

Decision

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Improving Technical ADP Support and Management (Issue II G, Page 18)

Issue

This issue deals with the need to clarify technical ADP functions and to provide technical ADP service support to users. Currently the State and District Office ADP organizations vary considerably in their functions and the support they are able to provide. When adequate support is not provided, user offices have attempted to fill the gap using "expert users."

Alternatives

a. Maintain the current diversity in Technical ADP functions and provide technical support on an ad hoc basis.

b. Agree on and standardize the functions for Technical ADP in the field offices and provide consistent technical services support to the users.

Recommendations

Alternative b with the following functions:

- Provide management of the Technical ADP function.
  - Develop ADP policies and procedures.
  - Develop plans and budgets (to support management direction).
- Responsible for life-cycle-management process.
- Responsible for configuration management process.
- Develop and manage automated systems design.
- Develop policies and procedures for computer operations (mainframe-minis-and micros.)
- Develop policies and procedures for telecommunications (Data, Radio, Voice, Microwave, LANS, etc.)
- Implement policies and procedures for ADP security.
- Develop policies and procedures for data base administration.
- Conduct monitoring and evaluation of ADP.
- Provide training in ADP.

Note: For basic technical services support it is recommended that this function be performed by the IRM unit unless it becomes a full-time function in operational units, (Divisions in the S.O) then the operational units would require their own positions to perform full-time basic technical services support. Complex programming, design, etc. would be performed by the ADP unit.

Decision

Approved as recommended _____ _____
Signature Date

Disapproved _____ _____
Signature Date

Approved as modified

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Signature Date

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The Leadership Function for Automation-Modernization (IRM) (Issue II B, Page 7)

Issue

Technical ADP people and users have different motivations, understanding and skills related to automation-modernization. This situation causes concern about priority-setting, budgeting, and other leadership skills necessary for managing technical programs, impacts on the workforce and dealing with rapid change, especially in the face of on-going work.

Alternatives

a. Do not develop leadership skills/functions specifically related to managing automation-modernization (IRM).

b. Develop leadership skills/functions specifically related to managing automation-modernization (IRM).

Recommendation

Alternative b with the following functions assigned to Managers and Supervisors:

- Develop comprehensive understanding of automation technology (current and potential) for Bureau applications.
- Improve individual computer literacy and proficiency and develop individual applications.
- Provide direction for automation-modernization policies, procedures, plans, and budgets.
- Participate in and provide guidance to appropriate steering and user committees.
- Recognize and manage impacts of rapid changes on the Bureau workforce.
- Provide leadership to assure the necessary discipline is achieved to develop and adhere to established standards, policies and procedures.

Decision

Approved as recommended _____ _____
Signature Date

Disapproved _____ _____
Signature Date

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Signature Date

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Organizational Issues

Field Office Organizational Structure

Issue

BLM State, District, and Resource Area Offices have organizational structures designed to accomplish our traditional mission, (e.g. Administration, Operations, L&RR, and Minerals). There is much disagreement about where information resources management functions should be placed in the Field Office organizations.

Alternatives (Illustration Below)

Alternative A

Consider information resources management a functional responsibility of all Bureau programs. Maintain a Branch of Information Services in an existing organizational unit, (e.g. Operations or Administration) in State and District Offices.

Organizational Decisions	
☐ IRM Branch/Staff	☐ IRM Division
☐ In Div. Administration (Recommended)	☐ New IRM Division (Policy & Guidance) *Retain Division of Administration.* (5 DSDs)
☐ In Division of Operations	☐ New IRM Division (Policy, Guidance, and Operations) *Retain Division of Administration.* (5 DSDs)
	☐ New IRM Division (Policy & Guidance) *Combine remaining Administration functions with Division of Operations and rename Division of Support Services.* (4 DSDs)
	☐ New IRM Division (Technical IRM) *Combine LIS Coordination, Records Administration, Data Administration, and Security with remaining Administration functions. Retain Division of Administration.* (5 DSDs)

Subalternative A1 (Illustrations 1a, b, c, pg. 28-30)

State Office:

- Establish or maintain the existing Information Services in Division of Administration.
- Establish a staff reporting to DSD of Administration to handle LIS Coordination, Data Administration, Records Administration and Security policy and guidance.
- Operational aspects of existing systems like ALMRS, GCDB, and ARD remain with the primary users of the system.

District Office:

- Establish or maintain an IRM Branch/Staff reporting to the District Manager or ADM of Administration.
- Place LIS coordination functions in the IRM Organization.
- Records, Security and Data Administration are responsibility off ADM for Administration.

Resource Areas:

- Establish or maintain existing IRM Staff reporting to the Area Manager or Administrative head.

Subalternative A2 (Illustrations 3a, b, c, pg. 36-39)

State Office:

- Establish IRM Branch in Division of Operations.
- Establish a staff reporting to the DSD of Operations to handle LIS coordination, Data Administration, Records Administration and Security policy and guidance.
- Operational aspects of existing systems like ALMRS, GCDB and ARD would remain with its primary users.

District Office:

- Establish an IRM Staff/Branch reporting to DM or ADM of Administration.
- LIS coordination is placed in IRM organization.
- Records, Security and Data Administration are located in Division of Administration.

Resource Areas:

- Establish or maintain existing staff reporting to Area Manager or the Administrative head.

Alternative B

Consider information resources management a new Bureau initiative that goes far beyond functional responsibilities of existing Bureau programs. Create a new Division of Information Resources Management in State and District Offices.

Subalternative B1 (Illustrations 2a, b, c, pg. 32-35)

State Office:

- Establish a Division of IRM.
- LIS Coordination, Records and Data Administration on staff reporting to DSD for IRM.
- Operational aspects of existing systems; ALMRS, GCDB and ARD remain with primary users.

District Office:

- Establish a Division or Staff reporting to DM.
- LIS Coordination, Records and Data Administration policy and guidance on staff reporting to DM.
- Operational aspects of ALMRS and ARD remain with users.

Resource Areas:

- Establish or maintain existing IRM Staff reporting to Area Manager or Administrative head.

Subalternative B2 (Illustrations 4a, b, c, pg. 40-42)

State Office:

- Establish a Division of IRM.
- All aspects including policy, guidance and operational aspects of ALMRS, GCDB, ARD and Records placed in Division of IRM.
- LIS Coordination, Records Administration and Data Administration on staff reporting to DSD for IRM.

District Office:

- Establish a Division or Staff reporting to DM.
- Division or Staff provides policy and guidance for LIS Coordination, Records Management, Data Administration, ALMRS and ARD.
- Operational aspects of ALMRS and ARD remain with primary users.

Resource Area:

- Establish or maintain existing IRM staff reporting to Area Manager or Administrative head.

Subalternative B3 (Illustrations 5a, b, c, pg. 44-47)

State Office:

- Establish a Division of IRM
- Combine Divisions of Administration and Operations to form one new Division of Support Services.
- Functions placed in Division of IRM are the same as described for subalternative B1.

District Office:

- Establish a Division of IRM
- Combine Divisions of Administration and Operations to form new Division of Support Services.
- Functions placed in the Division of IRM are the same as described for subalternative B1.

Resource Area:

- Establish or maintain existing IRM staff reporting to the Area Manager or Administrative head.

Subalternative B4 (Illustrations 5a, b, c, pg. 44-47)

State Office:

- Establish a Division of IRM consisting of all technical ADP functions.

- Retain Division of Administration by adding LIS Coordinator and policy and guidance for records administration, data administration, and security.
- Operational aspects of ALMRS, GCDB, and records remain in user Division.

District Office:

- The organization would be the same as on the recommended alternative.

Resource Areas:

- The organization would be the same as in the recommended alternative.

Recommendations (Illustrations 1a, b, c, pg. 28-30)

Consider information resource management a functional responsibility of all programs and accommodate it in the existing organizational structure.

At the State Office

- Maintain the existing Branch of Information Services in the Division of Administration.
- Establish a Staff reporting to the DSD for Administration to provide LIS Coordination and policy and guidance for Records Administration, Data Administration, and Security.
- Operational aspects of ALMRS, ARD and GCDB will remain with the primary users in other Divisions.

At the District Office

- Establish or maintain the existing Branch of Information Services in the Division of Administration or a Staff reporting to the District Manager.
- Records, Data Administration and Security on a staff reporting to ADM for Administration.
- LIS Coordination functions are placed in the IRM Organization.

At the Resource Area

- Establish or maintain an IRM Staff reporting to the Area Manager or Administrative head.

Decision

Approved as recommended _____ _____
Signature Date

Disapproved _____ _____
Signature Date

Approved as modified

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Signature Date

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Follow-ups Issues

Classification and other Personnel Actions

Issue

Once decisions are made on automation, modernization (IRM) functions and organizational structures, there needs to be administrative follow-up to document functional statements, delegations, position descriptions, classification standards, PIPRs, Vacancy Announcements, etc. These actions should be taken in a manner which permits and ensures Bureauwide implementation as rapidly as possible.

Alternatives

a. Each office develop their own administrative documentation without Bureauwide reference.

b. Provide Bureauwide documentation guidelines and standards with input from all organization levels.

Recommendation

Alternative b with the following action steps:

- WO (800) outline objective and make assignments.
- Prepare and issue guidance to all offices.
- All offices prepare implementation plans.
- Implement plans (Tie to FY 1990 AWP).
- Monitor and evaluate.

Decision

Note: The AD Management Service has been developing an action plan based on alternative b. This plan will be integrated with the "Modernization Master Plan" and with the FY 1990 AWP.

Skills Acquisition and Development

Issue

Once the functions for automation modernization have been defined at each organizational level, there needs to be follow up to assure that the right type and amount of skills are in place to perform those functions. There is presently no Bureauwide strategy to acquire needed skills. Such a strategy must include and integrate training, recruitment and contracting and be tied to the multi-year budget planning process.

Alternatives

a. Each office develop their own total skill acquisition plans without Bureauwide reference.

b. Each office build on their current training plans to include more emphasis on recruitment and contracting.

c. Develop guidelines and procedures for a Bureauwide integrated strategy for skill acquisition which includes training (building on the recent Training Needs Analysis), recruitment, and contracting.

Recommendation

Alternative c with the following action steps:

- WO (800) outline objectives and make assignments.
- WO Leads from Training, Personnel and Administrative Services prepare criteria for preparing an integrated plan.
- Under guidance from the integrated plan each component prepare guidance to all offices.
- Each office prepare and integrate component plans.
- Implement Plans (Tie to FY 1990 AWP).
- Monitor and Evaluate.

Decision

Note: The AD Management Service has been developing an action plan based on alternative c. This plan will be integrated with the "Modernization Master Plan" and with the FY 1990 AWP. There will be coordination with EEO.

Washington Office/Service Center Roles and Functions In Information Resources Management

Issue

Significant confusion exists over the roles and functions of the WO and the Service Center relating to automation/modernization (IRM). Clarification of the S.O., D.O. and R.A. functions and organizational structure may influence the W.O. and S.C. functions. New W.O. and S.C. organizations have been in place long enough to review. Also, there has been a shift in work emphasis from project development of the Target System to system implementation and management.

Alternatives

a. Do not attempt to review and clarify the W.O./S.C. automation-modernization functions at this time.

b. Review, evaluate and clarify the W.O./S.C. automation-modernization functions.

Recommendation

Alternative b with the following action steps:

- Authorized the W.O./S.C. review/evaluation study. Director/W.O. 800.
- Establish team and develop action plan.
- Complete review/evaluations.
- Brief Director (BMT) with recommendations/decisions.
- Prepare implementation plans.
- Implement action plans.
- Monitor and evaluate.

Decision

Note: The AD Management Service has been developing an action plan based on alternative b. This plan will be integrated with the "Modernization Master Plan" and with the FY 1990 AWP. The plan has been discussed with and reviewed by the S.C. Director and the Acting AD Support Services.

Appendix B
Study Team Members & Steering Committee Members

Study Team

Name	Expertise	Position	State
Pieter Van Zanden	(Team Leader)	ASD	Idaho
Al Pierson	Mgmt. Analyst	Mgmt. Analyst	WO 840
Ed Harne	IRM	SO IRM Branch Ch.	Utah
Terry Nichols	Admin.	DSD-Admin.	AZ
Bob Bainbridge	L&RR	DSD-L&RR	ESO
Bob Bennett	Minerals	ADSD-Minerals	WY
Aaron Horton	LIS	LIS Coord.	NM
Heidi Porter	ALMRS	ALMRS Coord.	CA
Mike Hengel	OA	Comp. Sys. Anyl.	SC 313
Fran Cherry	DM	DM	NM
Paul Jeske	RA Res.Ops.Mgr.	Res. Ops. Mgr.	OR
Linda Sedbrook	Personnel	Classif. Spec.	SC 631
Duane Tabb	Ops/Mpg Sci/Cadastral	WO Div. Ch.	WO 730

Steering Committee

Name	Position	Location
Ron Hofman	Special Asst. WO-800	OR
Judith Herrington	Mgmt. Analyst	SC
Dennis Anderson	IRM Br. Ch.	WO-773
Mike Penfold	SD	AK
Neal Morck	SD	CO
Bob Moore	SC Director	DSC
Ron Fox	DSD Administration	CA

Appendix C
Memorandum Authorizing the Study

IN REPLY REFER TO:

United States Department of the Interior

1210 (840)

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

EMS Transmission - 10/27/88
Instruction Memorandum No. 89-59
Expires: 9-30-89

October 25, 1988

To: All WO and Field Officials

From: Director

Subject: Information Resources Management Organization Study

Automation is having a major impact on the Bureau. During the development of our interim and target systems, we will be experiencing an increased proliferation of hardware and applications in our Field Offices, (State Offices, District Offices, and Resource Areas). In some instances, new organizations are being established or proposed to try to deal with the needs of the Field Offices as they relate to Information Resources Management (IRM). There are wide variations in approach, placement of IRM in the organizations, and functions assigned at each level.

It is apparent that automation will have an impact not only on how we do our business in the future but also on our existing organizational structure at every office level Bureauwide. This has been recognized by the BMT and the Field Committee. To follow up on their recommendations, I have requested the Assistant Director, Management Services, through the Division of Management Research, to conduct a Bureauwide study on the existing effects of automation and the effects that modernization will likely have on our Field Offices, IRM organization structures, and to make recommendations on how we can prepare ourselves organizationally for the change. From an organization management standpoint it is essential that we agree on what consistency and standards are appropriate Bureauwide.

This study is being conducted to assist you in your preparation for implementing the target system. I realize there are staffing needs which must be addressed immediately and some changes in your organizations may be necessary during the course of this study. I am however, discouraging you from making significant changes in your organizations with respect to IRM, until the results of this study are final.

The objectives of the study are:

1. Clarify the roles of line managers, program leads/specialists, and technical ADP people in automation at the three Field Office levels to support the Bureau mission.

2. Identify the automation functions (work) to be performed at each Field organization level, such as technical hardware support, hardware/software maintenance, training, applications support, and system support.

3. Identify automation related skill needs at each Field Office level to get the work done.

4. Develop recommended and alternative organization structures related to automation needs for each Field Office level.

5. Develop recommendations on how to acquire needed automation skills.

6. Recommend steps to develop position descriptions, classification, and titles for needed skill types.

The study will be done by the following team, composed primarily of employees from all three Field Office levels. Other team members include representatives of the Headquarters Office and the Service Center. An advisory committee will be formed which will include among others, at least one State Director, the Service Center Director, and Ron Hofman, Special Assistant to the Assistant Director, Management Services. The role of this committee is to advise the study team as needed throughout the study.

STUDY TEAM

Name	Expertise	Position	State
Pieter Van Zanden	Team Leader	ASD	ID
Al Pierson	Management Analyst	Management Analyst	WO 840
Terry Nichols	Administration	DSD, Admin.	AZ
Ed Harne	IRM	Ch., Branch Info Sys.	UT
Bob Bainbridge	L&RR	DSD, L&RR	ESO
Bob Bennett	Minerals	ADSD, Minerals	WY
Mike Dwyer	LIS	LIS Coord.	NM
Heidi Porter	ALMRS	ALMRS Coord.	CA
Mike Hengel	OA	Comp. Sys. Analyst	DSC
Fran Cherry	DM	DM, Roswell	NM
Paul Jeske	RA Res. Ops. Manager	Res.Ops.Mgr., Salem	OR
Sharon Salpini	Personnel	Pers. Staffing Spec.	WO 831
Duane Tabb	Ops/Mpg.Sci/Cadastral	Ch., Div. of Eng.	WO 730

We anticipate a three-step approach will be employed to gather information for the study. First will be a review of existing analyses and actions already taken by the various Field Offices to look at the work anticipated, the skills needed, the roles and functions, and the organizational placement of IRM in existing organizations. From this we can determine similarities and differences and see what issues we have to resolve on a Bureauwide basis. Based on step one, we plan to take a broader look at how these issues may relate to all offices and to establish a base line of existing skills, IRM functions being performed, and any other IRM organization ideas. This step will be done by questionnaire. A third step will be to conduct interviews with managers and others and to conduct any needed Field visits to observe ongoing organizational units in operation and to gather any additional data.

The proposed study schedule is as follows:

Scoping	9/23/88
Initial Team Meeting	10/24/88
Mail Questionnaire	11/25/88
Field Visits	3/10/89
Draft Report Prepared	4/21/89
Final Report Prepared	6/30/89

Robert F. Burford
Director

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

TAKE PRIDE IN AMERICA

IN REPLY REFER TO

1210 (840)

December 27, 1989

Instruction Memorandum No. 90- 212
Expires 9/30/90

To: All Field Officials

From: Director

Subject: Decision Document on IRM Organization Study

A study was authorized and has been completed which looked at the IRM organization at the State, District, and Resource Area levels in the Bureau. The study was led by the Idaho Associate State Director and team members represented a cross section of interests and skills from all levels of the Bureau. Oversight to the study team was provided by a steering committee that included three members of the BMT.

The draft report was completed in August 1989. The Field Committee was thoroughly briefed on the findings and recommendations. Each BMT member was asked to obtain maximum review prior to discussion of the report at the November 6, 1989, BMT meeting. The BMT discussion provided an opportunity for each member to provide ideas based on this review.

Appendix "A" of the report is a decision document and is enclosed with this memorandum as a means of documenting the decisions. The report will be finalized and issued in the near future.

The decision document contains two categories of decisions. The first covers the IRM functions to be carried out by key people in the Bureau. It is necessary to clarify these functions to assure delegations of authority, assignment of work, and accountability. I have concurred in the recommendations of the report on these functions. They have undergone extensive review and will be further refined to be issued as guidance and direction in accordance with WO Information Bulletin No. 90-9. This Information Bulletin calls for incorporating Automation/Modernization/IRM functions into organization and personnel documents on a Bureauwide basis. This effort is underway now, and you can expect further guidance in the near future.

The second category of decisions concerns the organizational structure for Automation/Modernization/IRM at the State, District, and Resource Area levels. In arriving at the decision in this category, the thoughtful input that many of you provided was considered.

There is no question about the importance of automation and automated data to the Bureau; technology and automated data must be managed. At the same time, the Bureau has been successful because of our ability to accomplish resource management and provide service to the public through our decentralized organization and program structure. It is essential to put automated tools and data in the hands of the users at the operational levels. It will be through applications and providing goods and services at these levels that we will continue to be successful and improve our performance. We must provide an organizational structure that assures management of the technology and maximum ownership and utilization by the operational users. It is the job of management to assure this happens and that the two are properly linked.
At the BMT meeting we discussed ideas about how to accomplish these objectives through various organizational structures. One of the key points was to place certain "core" IRM functions in the same organizational unit while assuring that operational units maintain control over applications. The current Branches of Information Services have generally done a good job of managing ADP and telecommunications technology and there is no need to change their organizational placement at this time. As the study points out, we need to strengthen our capabilities in the areas of Data Administration, Records Administration, Security, and LIS Coordination. Placing these core functions in one organizational unit will improve management direction and accountability. We also need to keep working with our operational-program organizational units to enhance their capability with Automation to make them more effective and productive. Based on these concepts, the study report recommendation on organizational structure is also concurred with as a logical next step to take at this time.

Each State Director, except Alaska and New Mexico, is expected to implement the decision on organization structure throughout their State, District, and Resource Area organizations by the end of FY 1990. The Eastern States Office should prepare to describe their complete organizational planning effort as soon as practical and before making any changes. As discussed above, the approved structure for IRM functions is appropriate for the Bureau at this time and should be consistently implemented by all offices (except as noted above). For this reason, language reflecting the decision for organizational placement of information resource management functions is being added to Bureau Manual Section 1212.21 (Organization Structure). BLM Manual 1203 - Delegation of Authority authorizes State Directors to approve changes in organization structure and functions for State, District, and Resource Areas, except items specifically prohibited in BLM Manual 1212.

If changes to your present organization are necessary to implement the decisions, BLM Manual Section 1212.22 requires that copies of organization changes be submitted to the Washington Office (840) for information purposes, as they occur.

Work is presently underway on issues identified in the report as follow up issues. Those include incorporating IRM functions into appropriate personnel documents, skills acquisition and development, and a roles/functions clarification study for the Washington Office/Service Center. Further information on these matters will be provided as it becomes available.

The issue of managing Automation/Modernization/IRM in the Bureau continues to be a high priority. All the work that went into this organizational study is deserving of special acknowledgment. Your support in implementing these decisions will be appreciated.

Dean Stepanek

Dean Stepanek
Deputy Director

Attachment
1 - IRM Organization Study Decision Document (16 pp)

Appendix A
Automation-Modernization Function/Structure Decision Document

Attachment 1-1

Functional Issues

Program Leaders/Management of Automation-Modernization (Issue II A, Page 3)

Issue

There are diverse interpretations about the role of program leaders and the function of managing automation-modernization in specific program areas. Some assume management, some do not, resulting in lack of and fragmented guidance on automation in program areas.

Alternatives

a. Delegate the function of developing and implementing policies and procedures for program automation to technical ADP positions/organizations.

b. Delegate the function of developing and implementing policies and procedures for program automation to program leader positions and organizations at State, District, and Resource Area levels.

Recommendations

Alternative b. with the following functions related to automation:

- Develop automation/modernization policies and procedures related to specific programs (handbooks, etc.).
- Determine automation program needs at appropriate organization levels (functional requirements).
- Develop, implement, and track plans and budgets for automation within specific programs.
- Manage automated program data:
  - Determine automated program data needs.
  - Determine automated data standards (within data administration guidelines).
  - Provide for data collection and entry (spatial and keyboard).
  - Prepare and administer data related contracts.
  - Develop and administer quality control standards.
- Provide training for program specific applications.
- Provide user support for program specific applications.

Decision

Approved as recommended — Dean Stepanek (Signature) — 12-20-89 (Date)

Disapproved — Signature — Date

Approved as modified

Signature — Date

Attachment 1-2

Administration-Management of Automated Records (Issue II D, Page 11)

Issue

The Bureau currently has no functional description for the work required to administer the automation of records. This new function involving policies and procedures for the creation, storage, retrieval, ownership, and access to legal, public, sensitive, and working records etc. goes beyond the tasks of current Records Managers. This situation parallels in many respects that of data administration.

Alternatives

a. Do not create an automated records administration function. Wait until there is more definitive Government-wide guidance on automation of records then decide on function in BLM.

b. Create an automated records administration function. BLM take the lead for development of policies and procedures for the automation of records which BLM controls.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for records administration.
- Oversee the development of standards (ownership, legal, public, sensitive, and other types of records).
- Develop and implement guidelines for records security, access, exchange and cost recovery.
- Provide quality control oversight for Records Administration.
- Provide guidance for Records Administration training.

Positions:

- There should be a full-time Records Administrator in each State Office.
- There should be a collateral Records Administrator with data administration responsibilities in each District Office.
- There should be a full-time or collateral records administrator with data administration responsibilities in each Resource Area as workload dictates.

Decisions

Approved as recommended — Dan Stepanovich (Signature) — 12-20-89 (Date)

Disapproved — Signature — Date

Approved as modified

Signature — Date

Attachment 1-3

Administration of Data (Issue II C, Page 9)

Issue

Apart from the impact of managing data within specific programs, the Bureau does not have in place agreed upon functions for the overall administration of data. Without comprehensive guidance and disciplined control of data, hardware and software will be of very limited value.

Alternatives

a. Accomplish management within each program (Issue A) and accomplish comprehensive data administration on an ad-hoc basis.

b. Create new data administration functions to accomplish those comprehensive functions on a continuous basis at all field office levels.

Recommendations

Alternative b with the following functions:

- Develop policies and procedures for data administration.
- Identify data ownership (corporate, program, external, etc.)
- Oversee the development of standards, attributes, codes, etc.
- Identify and implement guidance for data exchange, and cost recovery.
- Develop and implement guidelines for data security and access.
- Develop and implement guidelines for data modeling.
- Develop and implement guidelines for the administration of data element dictionaries.
- Provide quality control oversight for data administration.

Positions:

- There should be a full-time Data Administrator in each State Office.
- There should be a full-time or a collateral Data Administrator with records administration responsibilities at each District Office.
- There should be a collateral Data Administrator with records administration at each Resource Area Office.

Decision

Approved as recommended _____ Signature _____ Date

Disapproved _____ Signature _____ Date

Approved as modified

Implement no later than end of FY90.

Dean Stepanek
Signature

12-20-89
Date

Attachment - 1-4

Role/Function of "Coordinators" (ALMRS, GCDB, ARD, GIS) (Issue II E, Page 14)

Issue

The role of most "coordinators" has evolved beyond performing information transfer and coordination. The current functions involve operation and program management type roles. The term "coordinator" is not well defined and the functions and structural placement of "coordinators" is widely diverse across the Bureau causing communication and delegation problems.

Alternatives

a. Maintain "coordinators" as ad hoc, diversely defined positions performing current roles.

b. Redefine "coordinator" positions as performing "true" coordination roles.

c. Recognize the evolved operational functions of coordinators. Clearly define their current roles and institutionalize them into existing organizational units.

Recommendation

Alternative c as follows:

a. Delete GCDB coordinator title, include functions and retitle positions in S.O. Division of Operations (Cadastral Survey).

b. Delete ALMRS Coordinator title, include functions and retitle positions in appropriate operational unit.

c. Delete GIS Coordinator title, include the technical hardware/software aspects in Division of Administration. Include the working knowledge of GIS applications in the program areas (program leaders).

d. Delete ARD Coordinator title, include the functions for automating resource data in the role of program leaders and specialists.

Decision

Approved as recommended — Signature: [signature] — Date: 12-20-89

Disapproved — Signature: _____ — Date: _____

Approved as modified

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Signature: _____ — Date: _____

Attachment 1-5

LIS Coordination - Developing and Managing the Land Information System (Issue II F, Page 16)

Issue

By definition LIS is a system. It may also develop into an institutionalized BLM program (the planning system/program is a parallel), with significant meaning and visibility. Developing and managing LIS is a function needing clarification and standardization. Currently the LIS Coordination functions are loosely and diversely defined.

Alternatives

a. Consider LIS Coordination as a short-lived need and provide a sunset.

b. Consider LIS Coordination a long-range system/program need, and institutionalize the coordination and program management function.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for integrating GCDB, ARD, and ALMRS into a true Land Information System.
- Build and manage LIS as a Bureau program, coordinate the development of LIS plans, budgets, and evaluations.
- Coordinate educational outreach and inreach efforts.
- Coordinate user support for LIS applications.
- Coordinate and provide for training in LIS and its applications as a system.

Decision ***Deferred pending resolution of budget issues.***

Approved as recommended	Dean Stefanek Signature	12-20-89 Date
Disapproved	Signature	Date
Approved as modified		
	Signature	Date

Attachment 1-6

Integrating and Managing Mapping Sciences (Issue II K, Page 24)

Issue

Currently the functions of remote sensing, aerial photography/photogrammetry, cartography, plat drafting, map preparation, and graphics are distributed across a wide variety of organizations. Coordination has been weak and some functions are not adequately staffed. Automation technology provides an opportunity for logically combining these functions in a scientific context as other mapping agencies have done.

Alternatives

a. Provide flexibility by keeping components separate.
b. Provide continuity by standardizing functions under mapping science umbrella.

Recommendation

Alternative b with the following functions:

- Develop policies and procedures for a mapping science program integrating remote sensing, aerial photography/photogrammetry, cartography, plat drafting, and map preparation.
- Provide Mapping Science support for LIS e.g., Resources Base Data maps and GCDB maps and plats.
- Provide Mapping Science support for resource management programs.
- Manage the Mapping Science function.

Decision

Approved as recommended — Dan Stegash (Signature) — 12-20-89 (Date)

Disapproved — _____ Signature — _____ Date

Approved as modified

_____ Signature — _____ Date

Attachment 1-7

Improving Technical ADP Support and Management (Issue II G, Page 18)

Issue

This issue deals with the need to clarify technical ADP functions and to provide technical ADP service support to users. Currently the State and District Office ADP organizations vary considerably in their functions and the support they are able to provide. When adequate support is not provided, user offices have attempted to fill the gap using "expert users."

Alternatives

a. Maintain the current diversity in Technical ADP functions and provide technical support on an ad hoc basis.

b. Agree on and standardize the functions for Technical ADP in the field offices and provide consistent technical services support to the users.

Recommendations

Alternative b with the following functions:

- Provide management of the Technical ADP function.
  - Develop ADP policies and procedures.
  - Develop plans and budgets (to support management direction).
- Responsible for life-cycle-management process.
- Responsible for configuration management process.
- Develop and manage automated systems design.
- Develop policies and procedures for computer operations (mainframe-minis-and micros.)
- Develop policies and procedures for telecommunications (Data, Radio, Voice, Microwave, LANS, etc.)
- Implement policies and procedures for ADP security.
- Develop policies and procedures for data base administration.
- Conduct monitoring and evaluation of ADP.
- Provide training in ADP.

Note: For basic technical services support it is recommended that this function be performed by the IRM unit unless it becomes a full-time function in operational units, (Divisions in the S.O) then the operational units would require their own positions to perform full-time basic technical services support. Complex programming, design, etc. would be performed by the ADP unit.

Decision

Approved as recommended — Dean Stegamah (Signature) — 12-20-89 (Date)

Disapproved — Signature — Date

Approved as modified

Signature — Date

Attachment 1-8

The Leadership Function for Automation-Modernization (IRM) (Issue II B, Page 7)

Issue

Technical ADP people and users have different motivations, understanding and skills related to automation-modernization. This situation causes concern about priority-setting, budgeting, and other leadership skills necessary for managing technical programs, impacts on the workforce and dealing with rapid change, especially in the face of on-going work.

Recommendation

Develop leadership skills/functions specifically related to managing automation-modernization (IRM).

- Develop comprehensive understanding of automation technology (current and potential) for Bureau applications.
- Improve individual computer literacy and proficiency and develop individual applications.
- Provide direction for automation-modernization policies, procedures, plans, and budgets.
- Participate in and provide guidance to appropriate steering and user committees.
- Recognize and manage impacts of rapid changes on the Bureau workforce.
- Provide leadership to assure the necessary discipline is achieved to develop and adhere to established standards, policies and procedures.

Decision

Approved as recommended	Dean Stepanek Signature	12-20-89 Date
Disapproved	Signature	Date
Approved as modified		

Signature Date

Attachment 1-9

Organizational Issues

Field Office Organizational Structure

Issue

BLM State, District, and Resource Area Offices have organizational structures designed to accomplish our traditional mission, (e.g. Administration, Operations, L&RR, and Minerals). There is much disagreement about where information resources management functions should be placed in the Field Office organizations.

Alternatives (Illustration Below)

Alternative A

Consider information resources management a functional responsibility of all Bureau programs. Maintain a Branch of Information Services in an existing organizational unit, (e.g. Operations or Administration) in State and District Offices.

Organizational Decisions	
☒ IRM Branch/Staff	☐ IRM Division
☒ In Div. Administration (Recommended)	☐ New IRM Division (Policy & Guidance) *Retain Division of Administration.* (5 DSDs)
☐ In Division of Operations	☐ New IRM Division (Policy, Guidance, and Operations) *Retain Division of Administration.* (5 DSDs)
	☐ New IRM Division (Policy & Guidance) *Combine remaining Administration functions with Division of Operations and rename Division of Support Services.* (4 DSDs)
	☐ New IRM Division (Technical IRM) *Combine LIS Coordination, Records Administration, Data Administration, and Security with remaining Administration functions. Retain Division of Administration.* (5 DSDs)

Attachment 1-10

Subalternative A1 (Illustrations 1a, b, c, pg. 28-30)

State Office:

- Establish or maintain the existing Information Services in Division of Administration.
- Establish a staff reporting to DSD of Administration to handle LIS Coordination, Data Administration, Records Administration and Security policy and guidance.
- Operational aspects of existing systems like ALMRS, GCDB, and ARD remain with the primary users of the system.

District Office:

- Establish or maintain an IRM Branch/Staff reporting to the District Manager or ADM of Administration.
- Place LIS coordination functions in the IRM Organization.
- Records, Security and Data Administration are responsibility off ADM for Administration.

Resource Areas:

- Establish or maintain existing IRM Staff reporting to the Area Manager or Administrative head.

Subalternative A2 (Illustrations 3a, b, c, pg. 36-39)

State Office:

- Establish IRM Branch in Division of Operations.
- Establish a staff reporting to the DSD of Operations to handle LIS coordination, Data Administration, Records Administration and Security policy and guidance.
- Operational aspects of existing systems like ALMRS, GCDB and ARD would remain with its primary users.

District Office:

- Establish an IRM Staff/Branch reporting to DM or ADM of Administration.
- LIS coordination is placed in IRM organization.
- Records, Security and Data Administration are located in Division of Administration.

Resource Areas:

- Establish or maintain existing staff reporting to Area Manager or the Administrative head.

Alternative B

Consider information resources management a new Bureau initiative that goes far beyond functional responsibilities of existing Bureau programs. Create a new Division of Information Resources Management in State and District Offices.

Subalternative B1 (Illustrations 2a, b, c, pg. 32-35)

State Office:

- Establish a Division of IRM.
- LIS Coordination, Records and Data Administration on staff reporting to DSD for IRM.
- Operational aspects of existing systems; ALMRS, GCDB and ARD remain with primary users.

District Office:

- Establish a Division or Staff reporting to DM.
- LIS Coordination, Records and Data Administration policy and guidance on staff reporting to DM.
- Operational aspects of ALMRS and ARD remain with users.

Resource Areas:

- Establish or maintain existing IRM Staff reporting to Area Manager or Administrative head.

Subalternative B2 (Illustrations 4a, b, c, pg. 40-42)

State Office:

- Establish a Division of IRM.
- All aspects including policy, guidance and operational aspects of ALMRS, GCDB, ARD and Records placed in Division of IRM.
- LIS Coordination, Records Administration and Data Administration on staff reporting to DSD for IRM.

District Office:

- Establish a Division or Staff reporting to DM.
- Division or Staff provides policy and guidance for LIS Coordination, Records Management, Data Administration, ALMRS and ARD.
- Operational aspects of ALMRS and ARD remain with primary users.

Resource Area:

- Establish or maintain existing IRM staff reporting to Area Manager or Administrative head.

Subalternative B3 (Illustrations 5a, b, c, pg. 44-47)

State Office:

- Establish a Division of IRM
- Combine Divisions of Administration and Operations to form one new Division of Support Services.
- Functions placed in Division of IRM are the same as described for subalternative B1.

District Office:

- Establish a Division of IRM
- Combine Divisions of Administration and Operations to form new Division of Support Services.
- Functions placed in the Division of IRM are the same as described for subalternative B1.

Resource Area:

- Establish or maintain existing IRM staff reporting to the Area Manager or Administrative head.

Subalternative B4 (Illustrations 5a, b, c, pg. 44-47)

State Office:

- Establish a Division of IRM consisting of all technical ADP functions.

- Retain Division of Administration by adding LIS Coordinator and policy and guidance for records administration, data administration, and security.
- Operational aspects of ALMRS, GCDB, and records remain in user Division.

District Office:

- The organization would be the same as on the recommended alternative.

Resource Areas:

- The organization would be the same as in the recommended alternative.

Recommendations (Illustrations 1a, b, c, pg. 28-30)

Consider information resource management a functional responsibility of all programs and accommodate it in the existing organizational structure.

At the State Office

- Maintain the existing Branch of Information Services in the Division of Administration.
- Establish a Staff reporting to the DSD for Administration to provide LIS Coordination and policy and guidance for Records Administration, Data Administration, and Security.
- Operational aspects of ALMRS, ARD and GCDB will remain with the primary users in other Divisions.

At the District Office

- Establish or maintain the existing Branch of Information Services in the Division of Administration or a Staff reporting to the District Manager.
- Records, Data Administration and Security on a staff reporting to ADM for Administration.
- LIS Coordination functions are placed in the IRM Organization.

At the Resource Area

- Establish or maintain an IRM Staff reporting to the Area Manager or Administrative head.

Decision

Approved as recommended — Dan Stepanek (Signature) — 12-20-89 (Date)

Disapproved — Signature — Date

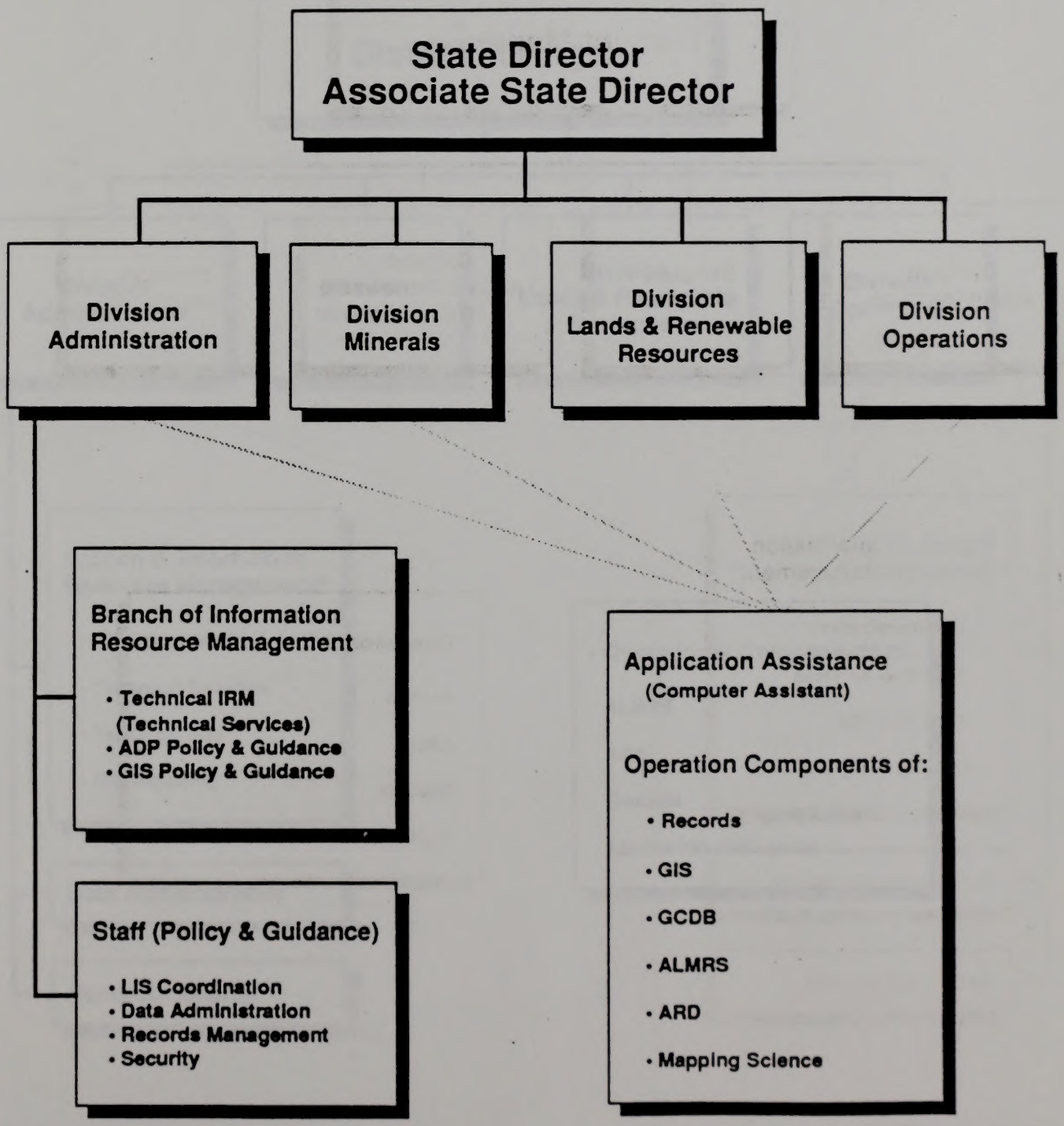
Approved as modified

Signature — Date

Attachment 1-13

Illustration 1a

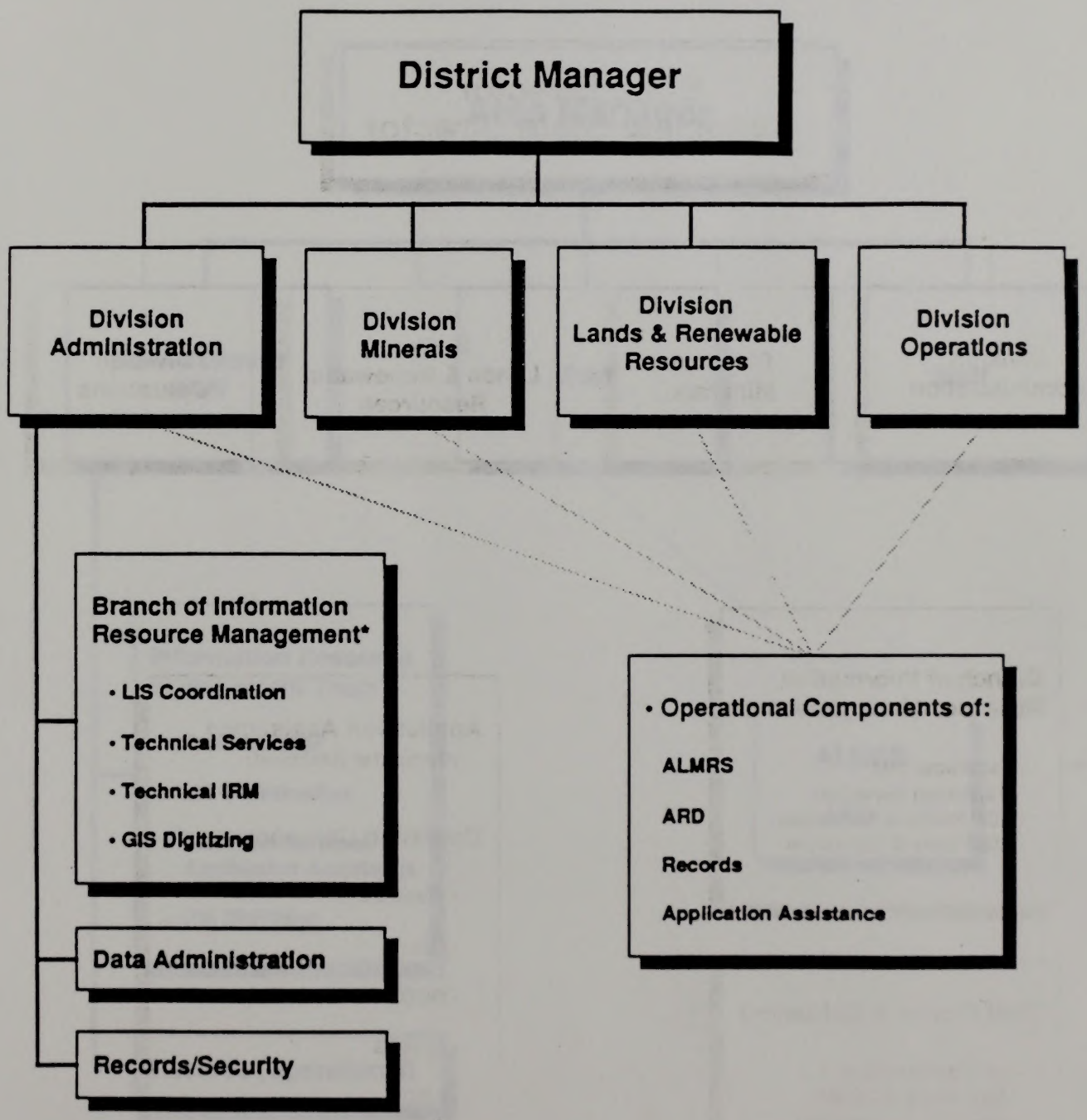
State Office Recommended Alternative



Attachment 1-XI

Illustration 1b

District Office Recommended Alternative

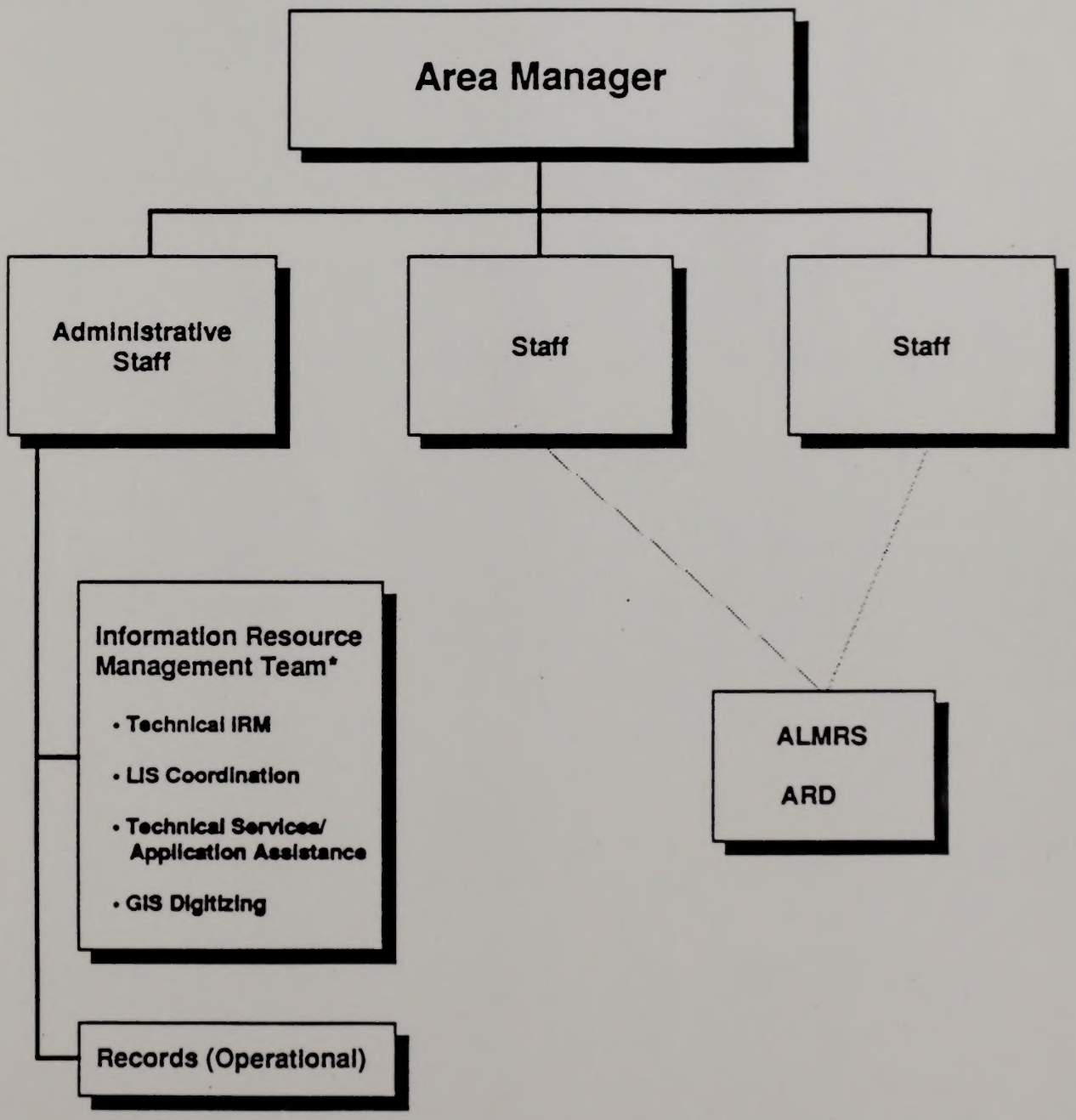


*May be a staff reporting to DM in smaller Districts.

attachment 1-15

Illustration 1c

Resource Area Office Recommended Alternative



Alternatively:
*Report to AM as IRM Staff if Size/Activity/Responsibility Warrants

Attachment 1-16

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

1210 (840)

March 11, 1991

Information Bulletin No. 91-357

To: All WO and Field Officials

From: Director

Subject: Status Report, Implementation of Decisions From the Field Office IRM Organizational Study

Attached for your information is a report prepared by the Division of Management Research, WO-840, on the status of implementing the decisions made in the Field Office IRM Organizational Study (Van Zanden Study). The Van Zanden Study was finalized in December 1989 and instructions to implement the resulting decisions were issued in Instruction Memorandum 90-212, dated December 27, 1989.

Overall, good progress is being made toward fully implementing the decisions. I am encouraged by the growing number of Bureau employees who are making good use of automation in our day-to-day work and especially the progress that many program leaders are making in bringing the use of automation into the program areas. We need to continue to stress the critical role and responsibilities that Deputy State Directors for Administration now have in providing leadership and coordination of all aspects of IRM in our Statewide organizations. While we still have much work to do, I feel confident that we are heading in the right direction with automation and we will be successful in achieving our AIM goals.

Any questions or comments regarding the enclosed status report can be directed to Al Pierson, WO-840, at FTS-268-6825.

Susan Lamson
Acting Deputy Director

1 Attachment
1 - Status Report (8 pp)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

1310 (940)

March 11, 1991

Information Bulletin No. 91-157

To: All WO and Field Officials

From: Director

Subject: Status Report, Implementation of Decisions from the Field Office IBM Organizational Study

Attached for your information is a report prepared by the Division of Management Research, WO-840, on the status of implementing the decisions made in the Field Office IBM Organizational Study (Van Zandt Study). The Van Zandt Study was finalized in December 1988 and instructions to implement the resulting decisions were issued in Instruction Memorandum 90-212, dated December 27, 1989.

Overall, good progress is being made toward fully implementing the decisions. I am encouraged by the growing number of Bureau employees who are making good use of automation in our day-to-day work and especially the progress our many program leaders are making in bringing the use of automation into the program areas. We need to continue to focus the critical role and responsibilities that Deputy State Directors for Administration now have in providing leadership and coordination of all aspects of IRM in our Statewide organizations. While we still have much work to do, I feel confident that we are heading in the right direction with automation and we will be successful in achieving our ADM goals.

Any questions or comments regarding the enclosed status report can be directed to Al Pierson, WO-840, at FTS-208-6825.

Susan Lawson
Acting Deputy Director

1 Attachment
1 - Status Report (8 pp)

STATUS REPORT

ON THE

IMPLEMENTATION OF IRM ORGANIZATIONAL DECISIONS

STATE, DISTRICT, AND RESOURCE AREA OFFICES

Prepared by:
Washington Office
Division of Management Research, WO-840
March 1991

BACKGROUND

At the request of the Director, a team was established from all levels of the Bureau organization to study the functions, roles and organization structure of the IRM organizations in the Bureau's Field Offices. After thorough review of the draft report by the Field Offices and the Bureau Management Team (BMT), the study was completed in December, 1989. The study was led by the Associate State Director from Idaho with the Washington Office Division of Management Research providing the staff support. This study is often referred to as the "Van Zanden Report".

After review and comment by the Field Offices, the draft report and its recommendations were presented to the Deputy Director. The decisions were made and issued by the Director to the Field Offices for implementation on December, 27, 1989, in Instruction Memorandum 90-212.

The decisions resulting from the Van Zanden Report were of two major categories: **Functional** (identification and assignment of IRM functions needing to be performed at each level of the Field organizations); and **Organizational** (identification of an appropriate organizational structure and reporting relationships for Field Office IRM organizations). The study team further recommended that as follow-up to the study, personnel documents for most Bureau employees and organizations needed to be amended or rewritten to incorporate automation functions into the functional statements, position descriptions, PIPRs, IDPs, vacancy announcements, etc.

Approximately one year has passed since the Van Zanden Study was finalized and the Instruction Memorandum was issued communicating the decisions and instructions for implementation. Likewise, it has been approximately one year since recommended language for incorporating automation duties into personnel documents for managers, program leaders, and users was developed and issued with instructions.

Now is an opportune time to check the status of implementation and make any adjustments that may be necessary.

METHODOLOGY

This Status Report was prepared by the Washington Office Division of Management Research, WO-840. Information in this status report was gathered from three main sources: (1) Implementation Plans submitted by the Field Offices in response to IMs 90-259, 260, and 261, "Incorporating Automation Functions Into Personnel Documents", (2) current PAYPERS records on file in the Division of Management Research, and (3) informal telephone survey of selected Field Offices by the Division of Management Research.

Personnel actions and organizational changes proposed in the Implementation Plans submitted by the Field Offices were verified first by checking against the PAYPERS printouts on file. Further followup and clarification was then accomplished by informal telephone surveys with selected employees in the Field Offices. In most instances the telephone contacts were with the Deputy State Director for Administration, the IRM Branch Chief, and line managers.

FINDINGS

(Functional Issues)

Decision from Van Zanden Report: Assign the function of developing and implementing policies and procedures for program automation to program leader positions and organizations at State, District, and Resource Area Levels.

The Program Leaders's role in automation was recognized as a very important role in the study. To assist in implementing this decision, suggested language to incorporate automation related functions into personnel documents for Program Leaders was developed. This information was transmitted to Bureau offices in IM-90-260 on February 12, 1990, with instructions to incorporate automation related responsibilities into personnel documents as appropriate. In response to this IM, State Offices determined which employees within their organization were affected and reported their schedule for implementation.

Followup indicates that good progress is being made toward incorporating automation responsibilities into the position descriptions and PIPRs of Program Leaders at the State Office and District Office levels. Many Program Leaders agree with the identification of automation functions and responsibilities for Program Leaders in the Van Zanden Report and are demonstrating good initiative in their program areas.

At the Washington Office, Program Leaders in the Minerals organization have noticeably led the way in accepting automation and incorporating its use into their program areas. Lack of understanding and guidance on Data Administration remains a frustration to many Program Leaders; however, considerable progress has been made over the last year by Program Leaders in the area of in Data Administration and incorporating automation into their program areas.

Van Zanden Decision: Establish full time Data Administrator and Records Administrator Positions at the State Offices level and full time or collateral duty positions for Data Administration and Records Administration at the District and Resource Area Levels to perform functions identified in the study.

Each State Office has now established a Data Administrator and a Records Administrator position at the State Office. Very few Districts except in Montana, have either position and no Resource Areas were found to have committed a position to either. These functions are typically assigned as collateral duties in the District and Resource Area Offices. The State Office Data Administrator positions have been filled. The understanding and acceptance of the need for Data Administration appears to have increased considerably in Bureau employees over the past year.

The State Office Records Administrator position, although established, has yet to be filled for the first time in several States. All States report plans to fill the Records Administrator position by the end of FY-91. Records Administration and the functions of a Records Administrator remain a mystery to many Bureau employees at this time.

Data Administration and Records Administration functions both appear to be slowly evolving within the Bureau at this time. Progress continues on developing Data Standards by Program Leaders and Data Administrators, while a small cadre of existing Records Administrators are trying to develop and coordinate the requirements for managing our records in an automated environment. Both functional areas are becoming better understood around the Bureau within the last year but we still have a long way to go.

Van Zanden Decision: The role and functions of "Coordinators"
Delete GCDB Coordinator title, retitle position and place functions in Cadastral Survey.

A Bureauwide, standard position description for a GCDB Manager has been developed. A single vacancy announcement was issued that recruited for all State Offices. The position is located in the Division of Cadastral Survey.

Delete ALMRS Coordinator title, include functions and retitle positions in appropriate operational unit.

Most ALMRS Coordinator positions that were present at the time the field interviews were conducted in the Van Zanden Study are still present today. Most ALMRS Coordinators continue to function as operational jobs rather than coordination jobs.

Delete GIS and ARD Coordinator Titles. Include the working knowledge of GIS Applications and automating resource data into Program Leader functions.

Most GIS and ARD Coordinator positions in existence a year ago remain present today. However, a significant change seems to be occurring on the part of many Program Leaders in accepting their role in automating resource program data and using/developing applications for managing resource programs.

Van Zanden Decision: Agree on and standardize the functions to be performed by a Technical ADP/IRM unit in the Field Offices and provide technical services/support to the users.

The functions identified in the Van Zanden Report for technical IRM people at the three levels of Field Offices have eliminated much of the confusion that existed about functional responsibilities of the ADP/IRM organization. Also, considerable progress has been made over the last year in staffing IRM positions for support at the District level. Resource Areas that are co-located with their District Office are provided technical ADP support from the District, while detached Resource Areas usually remain without on-site ADP support.

(Organizational Issues):

Van Zanden Decision: Consider information resource management a functional responsibility of all programs and accommodate it in the existing organizational structure. IRM Functions defined in the report should be placed in a Branch of IRM reporting to the DSD, Administration in the State Office; the Division of Administration or a staff reporting to the District Manager in the District Offices; and a staff reporting to either the Area Manager or the Administrative Supervisor in Resource Areas.

At the State Office level, this decision is fully complied with by all States except Alaska, New Mexico, and Eastern States. Alaska and New Mexico were exempted from decisions in the Van Zanden Report. The Eastern States Office was in the process of studying their entire organization structure at the time this decision was issued and was instructed to consider this and other decisions in the report in any reorganization proposals submitted. To date, no major reorganization actions have occurred at ESO and the IRM functions remain assigned to a Staff that reports to the State Director.

At the District Office level, compliance with the decision is very high. Nearly all District Offices now have one or more people hired full-time with automation functions assigned to them. Very few Districts have sufficient numbers of IRM people to consider a branch in the Division of Administration. Typically, a District has one or two employees to handle their automation needs and those people report to the Assistant District Manager for Administration or Support Services. Only one District was found not to be in compliance.

It is apparent that the District Offices have made good progress over the past eighteen months in staffing positions dedicated to automation. At the time the field interviews for the Van Zanden Study were being conducted, very few District Offices had dedicated full-time positions to automation. Now, nearly every District Office has at least one such position.

At the Resource Area level, little has changed related to automation and the organization structure. Very few Resource Areas have positions classified or committed to automation. A few detached Resource Areas are an exception, (Buffalo and Lander). Some Resource Areas, particularly those that are co-located with the District Office are able to get the services they need from the District Office. More often, however, the Resource Area employees continue to rely on their own skills as users of automation and get by as best they can without the full-time services of a computer specialist.

Van Zanden Decision: LIS Coordination, Data Administration, Records Administration, and Security should be placed as Staff reporting to the DSD for Administration.

Implementation of this decision is highly variable among the State Offices.

Compliance with the decision for organizational placement of LIS Coordination and Security is low at this time. In nearly every instance, the LIS Coordination and Security functions are assigned to the IRM Branch in the State Office. Neither of these functions has received staffing priority like Data Administration and Records Administration. Few States have a full-time LIS Coordinator. In several instances the IRM Branch Chief is the person assigned these functions.

Compliance with the decision for placement of Data Administration functions is high among the State Offices. Only Arizona and California report noncompliance. In Arizona, the Data Administrator reports to the IRM Branch Chief while in California the Data Administrator position reports to the LIS Staff Chief. In all other affected State Offices, the Data Administrator reports directly to the DSD for Administration.

Compliance with the decision on placement of Records Administration is difficult to determine at this time. Colorado, Idaho, Nevada, and Utah all plan to fill their Records Administrator position during this year and all four States report that the position will be assigned to the DSD for Administration. Wyoming has a Records Administrator onboard that reports to the DSD for Administration. Arizona and Oregon both have Records Administrators who report to the IRM Branch Chief. In California the Records Administrator reports to the LIS Staff Chief, and in Montana the Records Administrator reports to the Records Branch Chief under the DSD for Administration. The Records Branch in Montana includes ALMRS, central files, and the Public Room along with Records Administration.

CONCLUSIONS

Overall, reasonably good progress has been made over the past year toward implementing the decisions from the IRM Organizational Study.

The identification of functional responsibilities for position types and organizational units that was done in the Van Zanden study has done much to clarify roles and formalize the assignment of these responsibilities.

An increasing number of managers, program leaders, and users in the field are recognizing the use and management of automation as part of their jobs and are accepting that responsibility. The number of skilled users is increasing steadily in the Bureau as is the availability of equipment and applications.

The followup action of developing and incorporating automation related functions into the personnel documents of nearly all Bureau employees has done much to define and improve the acceptance of automation responsibilities among employees at all levels of the Bureau. Many of those interviewed cite this effort as perhaps the most significant of all the actions resulting from the Van Zanden study. Many report that for the first time, they can clearly see how automation is affecting them personally and what they need to do to prepare themselves for the changes that are taking place in their jobs. By incorporating automation functions into the PDs, PIPRs, etc., it is clear that automation is not just the responsibility of the IRM Branch and technical ADP people. Recent vacancy announcements have included automation requirements in the KSAs.

Consistency with the decision for placement of Data Administration functions is high among the State Offices. Only Alaska and California report nonconsolidation. In Alaska, the Data Administrator reports to the IRM Branch Chief while in California the Data Administrator reports to the Deputy Chief.

Coordination with the decision on placement of Records Administration is difficult to evaluate at this time. California, Idaho, Florida, and Utah all plan to the state Records Administrator position during FY 1987 and all now report that the position will be assigned to the DSD for Administration. Wyoming has a Records Administrator who reports to the DSD for Administration. Alaska and Oregon RM Data Records Administrators also report to the IRM Branch Chief. In California the Records Administrator reports to the ALS Staff Chief, and in Montana the Records Administrator reports to the Fiscal Chief under the DSD for Administration. The Records Manager in Arizona includes AZ-MAS, general files, and the Public Information Staff under Records Administration.

CONCLUSIONS

Overall, reasonably good progress has been made over the past year toward implementing the decisions from the IRM Organizational Study.

The identification of functional reporting failures for public records and systematizing that data was done in our Year Zero study, but done much to identify roles and formalize the assignment of these responsibilities.

An increasing number of managers, program leaders, and users in the field are considering the use and management of information as part of their jobs and are accepting their responsibility. The results of action study is increasing locally in the Bureau as it is the availability of equipment and applications.

The following areas of developing and non-pressing information related functions are the greatest concern of nearly all Bureau employees: lack of a mech to define and improve the acceptance of information responsibilities among employees at all levels of the Bureau. Many of those interviewed see the action to increase the proper management of all the actions resulting from the Year Zero study. Many report that for the first time, they are clearly see how automation is affecting their personally and what they need to do to prepare themselves for the changes that are taking place in their jobs. By incorporating automated functions into the PDs, PDSs, etc., it is clear that automation is not just the responsibility of the IRM Branch and technical ADP people. Recent vacancy announcements have included automation requirements in the KSAs.

The decision to place IRM in a Branch reporting to the Deputy State Director for Administration, while not totally agreed with by all offices, has been complied with and the issue is settled for now. The Bureau needs to continue to stress the critical role that Deputy State Directors for Administration now have in providing leadership and coordination of all aspects of IRM.

There remains considerable disagreement about the organizational placement of the Data Administration, Records Administration, LIS Coordination, and Security functions. Nearly every State Office is different in their organizational placement of this combination of functions. With a few noted exceptions, compliance with the decision for Data Administration and Records Administration to report to the DSD for Administration is good. The differences among the States in LIS can be attributed to the uncertainty experienced by the Bureau in budget and definition of the Target System over the past year. With Security, the question remains as to whether the Security function in State Offices must be separate from the IRM organization. A draft Departmental Manual currently being developed should provide sufficient guidance for the Bureau to make this determination and develop specific guidance for the States.

Data Administration and Records Administration functions are gradually becoming better understood and defined within the Field Offices but both are still evolving.

Technical ADP support and assistance has improved markedly over the past year, especially in the Districts as the result of establishing positions dedicated to automation in the District offices. Resource Areas that are co-located with the District Office have benefitted from the increased support available while detached Resource Areas are still in need of assistance. Funding and the availability of FTE remains an impediment.

The existence and operational role of "Coordinator" positions remains changed very little since the study was finalized.

RECOMMENDATIONS

1. It is too early for the Bureau to formally evaluate the Field Office IRM organizations for compliance and effectiveness in relation to the Van Zanden Report decisions. Implementation of several of the decisions is still in progress and sufficient time has not passed for a full-scale evaluation to yield meaningful results. Such an evaluation would be more appropriate in eighteen months to two years from now after all key positions are filled and the changes have had time to settle in.

2. No changes in the decision to place IRM as a Branch reporting to the DSD for Administration should be made. Eastern States Office is presently considering establishing a DSD for Administration. If a Division of Administration is established at ESO, a Branch of IRM should be established in the new Division. No changes in the New Mexico and Alaska IRM organizations are addressed at this time. The effectiveness of these two organizations will be useful for comparative purposes in future evaluations of the State Offices.

3. No changes should be made at this time in the decision to place LIS Coordination, Data Administration, Records Administration, and Security separate from the IRM Branch and reporting directly to the DSD for Administration at the State Office level.

The rationale for the organizational placement of these functions remains unchanged from the time the decision was made by the Director. Data Administration, Records Administration, and LIS Coordination are functions that span all Bureau programs. There remains the need to provide direct access for these functions to the State Management Team, through the DSD, in order to facilitate the necessary cross-program decisionmaking process in Data, Records, and LIS. The Bureau should continue to stress the critical role that Deputy State Directors for Administration now have in providing leadership and coordination for all aspects of IRM. Organizational decisions and personnel documents and actions affecting this position should reflect its expanded role in IRM. This issue should be given high priority in any future evaluation.

The question of whether or not Security must be separated from the IRM organization in the State Offices remains to be addressed. As the draft Departmental Manual addressing this topic is finalized, the Bureau should make the determination and issue definitive guidance to the Field.

4. Complete the ongoing effort to develop and continue to utilize automation related requirements in personnel documents and actions where appropriate. The DSD for Administration and the IRM Branch Chief remain to be developed. Both are scheduled to be completed in the Spring of 1991.

5. As regular Personnel Management Evaluations are conducted, the existence and appropriate use of automation requirements in personnel documents and actions should be one of the topics of evaluation.

RECOMMENDATIONS

1. It is too early for the Bureau to formally evaluate the Field Office IRM organizations for compliance and effectiveness in relation to the Van Zandt Report decisions. Implementation of several of the decisions is still in progress and in many cases the ten planned RFO's evaluation to yield meaningful results. Such an evaluation would be more appropriate in eighteen months to two years from now when all key positions are filled and the changes have had time to settle in.

2. No changes in the decision to place IRM as a Bureau reporting in the DSD for Administration should be made. Western State Office's proposal to establish a DSD for Administration. It's Division of Administration is established as RSO, a Branch or IRM should be established in the new Division. No changes in the New Mexico and Alaska IRM organizations are advanced at this time. The effectiveness of these two organizations will be useful for comparative purposes in future evaluations of the State Offices.

3. No changes should be made at this time in the decision to place LIS (Coordination, Data Administration, Records Administration, and Security) reports from the IRM Branch and reporting directly to the DSD for Administration at the State Office level.

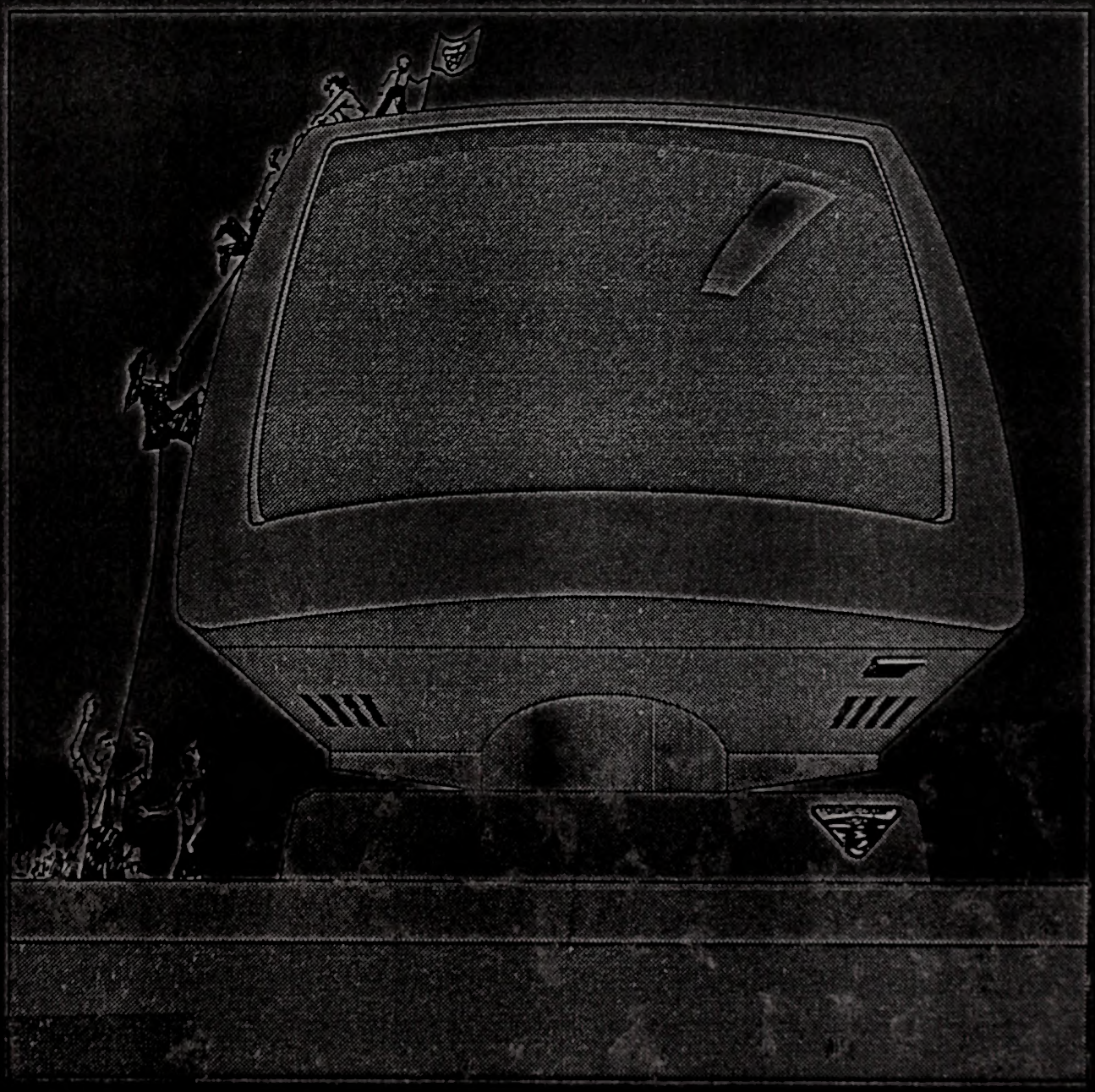
The solution for the organizational placement of these functions remains unchanged from the time the decision was made to the Director. Data Administration, Records Administration, and LIS Coordination are functions that exist in all Bureau programs. There remains the need to provide direction across the three functions in the State Management Team, through the DSD, in order to facilitate the necessary cross-program decision-making process in Data, Records, and LIS. The Bureau should continue to stress the critical role that Deputy State Directors for Administration now have in providing leadership and coordination for all aspects of IRM. Organizational decisions and personnel documents and actions affecting this position should reflect its expanded role in IRM. This issue should be given high priority in any future reviews.

The question of whether or not Security must be separated from the IRM organization in the State Offices remains to be addressed. As the draft Departmental Manual addressing this topic is finalized, the Bureau should make the determination and issue definitive guidance to the Field.

4. Complete the organization effort to develop and continue to utilize automation related requirements in personnel documents and actions where appropriate. The DSD for Administration and the IRM Branch Chief remain to be developed. Both are scheduled to be completed in the Spring of 1991.

5. As regular Personnel Management Evaluations are conducted, the existence and appropriate use of automation requirements in personnel documents and actions should be one of the topics of evaluation.

Impacts of Modernization and Automation on the Bureau of Land Management



Final Report